Risk, Rumour and Precaution: The Myth of Mobiles Causing Petrol Station Explosion

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Encountering the Issue

This paper is a preliminary investigation into the ongoing issue of banning the usage of mobile phones in petrol station forecourts. I came across this issue – in same way as some of you, most probably – through being assailed at a petrol station by a teenager shouting over the tannoy that I had to turn my mobile off. Although often not very visible, signs with a line running across a cell phone do indicate that their usage is, at least, discouraged. On one occasion, in particular, I took it upon myself to question my instruction and the precise meaning of the sign. It was explained to me that company policy was to discourage mobile usage because of the possibility of them causing an explosion. Partly, it transpires, the prohibition is a simple response to what is known as Hazardous Area Classification. Under this regulation, station employees are taught that the area within 14 feet of the pump is 'hazardous' and something like a lit cigarette should be kept away. But it became apparent that there was more to this tale than the simple and self evident enforcing of basic health and safety. It also operates at the same time as some operators have adverts suggesting you 'top up' your mobile on the petrol pump itself!

Having become something of an expert in the science of mobile phone technology and its possible effects through the scientific research for writing *Cellular Phones, Public Fears and a Culture of Precaution* (New York: Cambridge University Press, 2004), I knew that there was no obvious way in which a mobile could trigger such an event. In the simplest terms the amount of power is too low to have the potential to cause any kind of physical effect, particularly in modern mobile phones. It can be added that causing an explosion isn't that easy. No matter how intuitive it might seem, it's not even possible even for a burning cigarette to ignite a petrol fire, as it is simply not hot enough.

I was also already sensitised to ways in which this extraordinarily successful technology has been problematised. My book had examined how mobiles had been stigmatised (ultimately unsuccessfully due to their centrality to people's lives). This ban on their use at petrol stations struck me as further adding to the sense that mobiles were indefinably threatening. As such I was intrigued to look further, not least into how this ban had come about given its scientific improbability.

More practically itt is worth noting that the ban on mobile usage at petrol station forecourts has a number of consequences:

- conflict on the forecourt

Although there appear to be no accurate figures, industry experts attest to a rise in physical confrontations between customers and station cashiers. Many of these have arisen directly from hostile reactions to attempts to enforce the ban on mobile usage

- too many warnings means no warnings

Typically there are about 10 warning signs of various sorts at US gas stations. As in comparable situations of a proliferation of warnings, hypothetical or largely precautionary warnings serve to distract from more real problems. The principal danger at a petrol station is that of distraction, with regard to the overfilling of tanks or collision for example. For those concerned with forecourt safety with regard to possible fires, the issue remains the occasional problem of vehicles already on fire being driven onto forecourts (there were 42 incidents of cars on fire being driven onto the forecourts of one major operator, BP, alone last year). An even less well known and less obvious forecourt risk is the problem of, largely American, static fires discussed below.

There is a need for a certain degree of attentiveness whilst in the confined and potential dangerous environment of a gas station forecourt, which is not necessarily enhanced by an ambiguous ban on cell phone usage (although, of course, speaking on a cell phone is a potential distraction). An added twist to this issue in the UK and other countries has arisen with the banning of cell phone usage whilst driving in response to reliable (if still contested) research showing the dangerous effects of distraction from mobile phone usage whilst driving. Yet given the ban on speaking on a mobile whilst driving, there is an argument to say that the ban would be made more effective if necessary cell phone calls could now be made safely whilst stationary at a gas station.

- further problematisation of mobiles

It is already the case that there is a curious discrepancy between the way in which cell phones are absolutely central to European life in particular, and the way in which it is vaguely known that they might be somehow dangerous. Britons, for example, are generally aware about allegations of negative health effects yet have nothing in their own and their friends', often long-standing usage of a cell phone which in any way confirms these alleged, invisible dangers. Cell phones are the archetypal 'phantom risk'; associated with an inconsequential, almost existential sense of unease. The ban on their usage at filling stations adds to this, arguably unnecessary perception of insecurity.

Intellectual Approach and Influences

In a wider sense my interest developed from a longstanding emphasis upon examining 'risk stories', tracing the evolution and potential politicisation of risk issues. Earlier work on mobile phones and health suggested that carefully tracing the history and 'social construction' of a risk story was more useful than uncritically accepting the 'given-ness' of such problems as influential sociological work has done. The 'risk society' thesis of Ulrich Beck, for example, theorises on the basis of assuming the given quality of environmental hazards as so overwhelming to be beyond our capacity to effectively respond. Radiation, for example, is presented as having qualities – invisible, transnational, and incalculable in its human impact – that render it beyond our capacity to control or even understand. Even the most basic distinctions between harmful ionising, and non harmful, non-ionising radiation are not made giving his analysis a speculative, even empty character – at least with regard to environmental and technological hazard.

On the other hand, a focus upon the social construction of risk issues avoids becoming too narrowly focused upon scientific/technical aspects in their own right. Particularly in American risk writing, risk perceptions are frequently dismissed on the basis simply of their scientific

implausibility. Even (human) risk perceptions are often treated in a narrowly technical way divorced from social context.

Whilst the technical aspects of a given risk inform the way in which they make an impact upon perception or not, it cannot be assumed that they will be decisive. Certainly in the case of health fears about mobile phones, the scientific implausibility of these claims has been fairly irrelevant to perceptions based upon precautionary fears that mobiles cannot be declared safe (something clearly beyond science). The extent to which 'the science' determined the fate of a risk issue is itself reflective of national political culture more than scientific knowledge in its own terms. In the United States, for example, the scientific consensus on any potential controversy appears relatively important, reflecting the continued centrality of evidence-based in the American context (albeit with important exceptions such as the stem cell debate).

Certain aspects of the work of Douglas and Wildavsky were one major influence upon the approach pursued in this study. In *Risk and Culture* they emphasised examining the process of politicisation in understanding why some risk issues, out the thousands of potential candidates, predominated over others in a particular culture. A second insight was locating the general elevation of risk issues and their advancement in what they saw as the erosion of 'the centre' (the traditional 'establishment') and its values (free enterprise, respect for authority, expertise etc), and the rise of the 'periphery' and its values. This new 'periphery' was personified by the new movement for consumer and environmental rights led by Ralph Nader in the America of the early 70s. But these originally 'counter-cultural' claims were to become the mainstream as the 1970s progressed. It is important to understand this profound cultural shift, not least in how it has framed a now classical pattern for the advancement of risk concerns. Expressed in an often conspiratorial anti-corporate discourse which is mistrustful of both (mainstream) science and politics, the archetypal risk issue in contemporary Anglo-American culture is often met with a relatively defensive response on the part of authority keen to disprove accusations of complacency with regard to public health (Burgess 2004).

A second major influence upon this work is the 'social problem construction' school within American sociology. In this approach, pioneered by Spector and Kitsuse, the focus is upon understanding how a particular social issue becomes framed as a problem deserving of our attention. The development of an issue is traced, focusing upon how it becomes transformed through interaction with particular agencies such as those inclined to frame issues in terms of health problems. This tradition is also interested in 'claims makers'; the actors who advance the claim that something represents a social problem. Most research in this school has been concerned with moral concerns such as child abuse, but I have used it to examine a science-based issue, redefining claims makers, for example, as 'risk entrepreneurs'. Social problem construction literature is also of direct relevance to this study in looking at rumours and urban legends. Best, for example, examines the rumour of the 'razor blade in the apple' that led to American parents preventing their children taking part in trick or treating (Best and Horiuchi 1985). It quickly became apparent that the mobile phone forecourt issue contained elements of contemporary rumour as baseless as those in the razor blade in the apple story. The, largely sociological, literature on rumours and their history was also useful in considering the implications of the issue.

Investigating The Ban on Mobile Usage

Still mindful of how the issue often presented itself, I also remained interested in how any such ban would be reinforced ‘on the ground’ by station cashiers. In this regard it was unclear whether anecdotal reports of being told to ‘switch off’ were the result of a handful of overzealous employees or were representative of official company policy. Of particular interest was the reasons that forecourt attendants might give for the existence of the ban, and from where they might derive their account. It appeared also useful to look at the international situation with regard to the banning of mobiles at petrol station forecourts. With regard to the mobile phone health effects issue this had proven a very useful realm of investigation, as vast national differences in approach to the issue suggested that political culture was more influential than science in the management of risk.

Beginning with the forecourt attendants and their enforcement of the restriction, some pilot research simply involved asking 25 attendants at various petrol stations around the country why the ban was in place. Almost all attendants went beyond ‘its company policy’ to explain that it was because of the risk of a fire being caused.

Some examples:

- at Faversham Tesco’s petrol station the response was that the mobile phone could ignite the vapours from petrol
- At Sainsbury’s Wimbledon station the response was that a spark from the mobile battery might ignite petrol – he’d heard of 4 or 5 cases where it had happened
- At another London station:
  Q: Do you know why it says to turn mobile phones off?
  A: Sometimes blowing up.
  Q: Really?
  A: Yes, sometimes, no guarantee.
- At a Sussex BP station it was explained that the sign is there because mobile phones make a spark and this can cause the petrol to ignite. Asking about what evidence they had, the reply was that they go on a course about fire in the forecourt - and apparently they are told it has happened.

Most interestingly, a few took it upon themselves to elaborate the apparent role of rumour, captured by the quote to one of my colleagues at Lancaster. As he explained:

> A local Texaco garage even bans the use of car radios on the forecourt (technically even more far-fetched as a source of ignition than is a mobile phone). I asked the cashier why and she told me about "that poor man down south who set fire to himself with his phone". Round here "down south" could be anywhere but is a long way away!

Rather comically I also had a story concerning a similar incident ‘up North’!

There were also some alternative explanations, such as the possibility that the cell phone might interfere with the station’s systems, particularly the cash registers (these are similar to the issues of mobiles being banned on airplanes and, more contentiously, in hospitals). One cashier explained that they could end up being overcharged because the radio waves might interfere with processing!

The ban also operates in a number of European countries. The ban is operated in France on the basis of a potential spark from the cell phone, and is officially backed by company policy at Total, for example. The ban is more haphazard in Italy, but one colleague found that rumour played a role not only in the UK:

> 'Just noticed a no cell phone sticker in my local - the attendant said they are not permitted due to electromagnetic waves & that this had caused an explosion in Malaysia, the only case in the world (he's clearly used extensive sampling techniques!).'

Refuting the Risk of Cell Phone Usage at Gas Stations

Through further investigation it became clear that there is considerable controversy around this issue as authoritative recent research had effectively confirmed the virtual impossibility of mobiles causing a forecourt explosion. Scientific findings were discussed at a conference in London in 2003 and representatives of the mobile industry in the UK had been actively lobbying the petroleum industry to rescind its ban.

In response to the increasing numbers of reports, e-mails and sometimes elaborate notices that were circulating in the late 1990's, certainly around the intranet of oil giant BP, BP carried out its own initial research. But the most decisive contribution came from the work of Glenn Kuriger and his team at the University of Oklahoma. The University of Oklahoma Center for the Study of Wireless Electromagnetic Compatibility study (August 2001) concluded that, 'While it may be theoretically possible for a spark from a cell phone battery to ignite gas vapor under very precise conditions, the historical evidence does not support the need for further research.' The wording of this conclusion is significant with regard to other fields. It can be suggested that it has become the norm to routinely suggest that further research should be carried out even when little evidence of a problem has emerged from initial studies. Returning to the cell phone health issue, most parties to the debate suggest that 'further research' is needed, despite the absence of any evidence of human harm from the many studies carried out to date. It is perhaps unsurprising that investigators should err on the side of caution and suggest more research should be done to explain any small anomalies in results or, more cynically, because it guarantees a further round of research funds!

Yet in the forecourt case the Oklahoma study chose to reject the need for further research, suggesting an unusual degree of confidence in the unlikelihood of a cell phone causing a gas station fire. At the same time it should be recognised that safety cannot be declared or the possibility of a fire entirely excluded; there remains a degree of uncertainty as in other controversies. In this sense this remains a potential candidate for arguing a precautionary approach as in the case of how some countries have responded to the cell phone health issue (and many other limited or hypothetical risks).

Another study by Exponent Failure Analysis Associates of Menlo Park, California (December, 1999), *Cell Phone Usage at Gasoline Stations*, concluded similarly that "…the use of a cell phone at a gasoline filling station under normal operating conditions presents a negligible hazard and that the likelihood of such an accident under any conditions is very remote." Theoretically there is sufficient power in the battery of a mobile phone (or battery operated drill) to present a

risk but it requires ‘optimum conditions’; optimum conditions that are highly unlikely to actually occur.

Understanding the Myth of Cell Phone Forecourt Fires

Given the lack of scientific credibility, why was there a widespread sense that there was a danger of mobiles igniting petrol on the forecourt?

The first reason is that, at least in the UK, a precautionary restriction was introduced following the appearance of the first (analogue) cell phones. This was not based upon any scientific research. Discussions with experts suggest it was firstly a response to a general situation where more electrical communications devices were being brought onto the forecourt than in the past; this was the era o the the CB radio, for example. It was the job of regulators to police the petroleum forecourt and in this case they adopted a ‘better safe than sorry’ approach. The more specific concern was with the (early) cell phones themselves. These were the large ‘brick’ devices that now appear as if from a different century to modern slimline digital devices. There was some meaningful grounds for concern – at least in comparison to modern cell phones – in that they operated typically on power levels. The first regulation was based on old technology, when old brick phones had a powersource of around 20volts compared to 0.6-3.6 volts today. Regulations in 1992 prohibiting mobile usage as part of the operators licensing conditions were renewed in 1996 and 2004. Further, under the Dangerous Substances and Explosive Atmospheres Regulations of 2002, operators are obliged to consider and control any such risk on the forecourt.

The second, perhaps most interesting part of the answer lies in rumours generated through the Internet. Indeed, it was precisely concern at the impact of these rumours that led to the commissioning of research and the London conference. The rumours passed on in the course of forecourt cashiers enforcing the mobile ban also acquire more significance in the knowledge that petroleum company employees are effectively communicating rumours that are perceived to have been damaging in a different form on the Internet.

It transpired that the issue was actually very ‘active’ in the sense that stories were currently circulating on the Internet and through e mail circulars about alleged incidents of forecourt explosions. The cell phone forecourt myth has acquired the status of a widely recognised urban legend, appearing on the Snopes website, the most renowned site refuting contemporary rumours. Perhaps the most common electronic mail rumour (which was actually circulated to myself anonymously independently of any research on the issue) runs as follow:

> Subject: The dangers of static at petrol pumps
>
> All, this Incident was reviewed at the Monthly Safety Meeting today.
>
> If you were unable to attend ,please review the short video clip highlighting the dangers of mobile phones within petrol fuel stations.
>
> The Shell Oil Company recently issued a warning after three incidents in which mobile phones (cell phones) ignited fumes during fuelling operations.

In the first case, the phone was placed on the car's trunk lid during fueling; it rang and the ensuing fire destroyed the car and the gasoline pump. In the second, an individual suffered severe burns to their face when fumes ignited as they answered a call while refuelling their car. And in the third, an individual suffered burns to the thigh >>and groin as fumes ignited when the phone, which was in their pocket, rang while they were fuelling their car.

You should know that: Mobile Phones can ignite fuel or fumes , Mobile phones that light up when switched on or when they ring release enough energy to provide a spark for ignition. Mobile phones should not be used in filling stations, or when fuelling lawn mowers, boat! , Etc. Mobile phones should not be >>used, or should be turned off, around other materials that generate flammable or explosive fumes or dust, (i.e.solvents, chemicals, gases, grain dust, etc.)
His company has researched 150 cases of these fires. His results were very surprising:

1) Out of 150 cases, almost all of them were women.
2) Almost all cases involved the person getting back in their vehicle while the nozzle was still pumping gas. When finished, they went back to pull the nozzle out and the fire started, as a result of static.
3) Most had on rubber-soled shoes.
4) Most men never get back in their vehicle until completely finished. This is why they are seldom involved in these types of fires.
5) Don't ever use cell phones when pumping gas
6) It is the vapors that come out of the gas that cause the fire, when connected with static charges.

Thanks for passing this along.

Regards, Gary.

Gary Mowat
Schlumberger
Reservoir Completions - Kirkhill
QHSE Advisor

This e mail is a variation on a document which duped staff at the European arm of U.S. oil giant Exxon Mobil. The e mail, which calls itself a "Safety Learning Event" and has circulated on the Internet for some time, claims that Anglo-Dutch oil group Royal Dutch/Shell Group reported three incidents where mobile phones have ignited fumes while being answered or ringing during fuelling. Reports indicate that the e mail has entered the intranet of oil giant Exxon and been consequently treated as authoritative by employees. It allegedly slipped through the company's verification process after being posted on an internal, edited bulletin board -- from the company's safety department as part of an informal information-sharing agreement between oil companies.

Looking at the history of the Internet rumour, it appears to have begun in 1999 through an effectively self-created second-hand report of an incident in Indonesia reported in the *China Post*, an English speaking newspaper in Taiwan. The article reported a supposed incident where a person was pumping gas while on their wireless phone and sparks from the cell phone caused an explosion. The article attributed the story to Shell Oil Products Ltd. This incident prompted other reports to be circulated on the Internet. Unconfirmed reports suggest that these rumours had the most impact in the United States. In response and without any verification of the story or study of the issue, it is alleged that some American petrol retailers put warning labels on their pumps prohibiting the use of cell phones while pumping gas. Certainly, these warning signs are present at most US gas stations. Most impressively there is a video stream available on the Internet dramatically showing a spark and flame jumping from a gas pump held by a woman and the opening to the tank.

The Internet rumour clearly gained its authority from the fact that it apparently came from the oil giant, Shell. Concerned both at the story and their implication in it, Shell eventually officially refuted the hoax. In a letter dated February 28, 2002 from Shell U.K. Oil Products to the Federation of the Electronics Industry, the UK association representing the wireless industry, offers this conclusion "the email [being sent around stating explosions due to the use of wireless phones at Shell stations] is from a non-Shell source and that the originating email was an Internet hoax. This would indicate that the three cases being referred to are completely fictitious" and the letter also noted "…Shell has no knowledge of any specific incident of ignition that occurred as a result of using a mobile phone on forecourts. …Any emails to the contrary, which are currently being circulated, have not emanated from within the Shell Group and therefore do not represent our views."

The 'official' rebuttal from Shell has make little impact upon the circulation of the rumour, however. This reflects a general problem that an interesting, exotic rumour is likely to make more impact than any official denial from a large corporation (arguably, the denial is likely to confirm suspicions on the basis that there is no, corporate, smoke without fire!). The literature on the corporate handling of rumour reflects these difficulties (diFonzo and Bordia). However, it can be argued that despite the general difficulty of dispelling anti-corporate rumour, had the denial been accompanied by an attempt to explain the impossibility of such an occurrence the denial may have been more persuasive. It is unclear whether such distortions have come about deliberately or accidentally, although clearly bogus e mails involve a more conscious process of deception. As has been observed in the sociology of rumour, tracing the precise origin of rumours (particularly with the Internet) it remains an extremely difficult and perhaps distracting exercise (Donovan 2002).

No Smoke Without Fire? The (Almost) All American Static Fire

Internet rumour is part of the answer to the widespread sense that there is a real danger of mobile created forecourt fires. The effectiveness of these rumours is partially explained by the fact that there actually have been incidents of fires and explosions on station forecourts - blamed upon mobiles which in fact have been caused by static build up. Richard Coates from BP has personally checked out many of the 243 documented fires that over an 11 year period appear to have been caused in the USA primarily by discharge of static electricity. The Internet rumours

are a twisting of real information rather than pure invention. Corruption, even of genuine messages from authentic sources occurs, and that relating to the US Petroleum Equipment Institute's 'Stop Static' programme is a classic case. The original report, factually based stating that the fires reported had static origins, was taken and subtly altered to give the impression that cell phones were involved. In fact, the 'dangers of static at fuel stations' e mail above is a subtle alteration of a genuine communication.

There are incidents of fires and explosions at petrol stations, most notably in the USA. In recent years, and in the absence of other explanation, mobile phones have been blamed as the most likely culprit. Of course, this 'circumstantial guilt' is facilitated by the ubiquity of the mobile phone. Even in the USA, where usage is at lower levels than in many European countries, there is a high likelihood that a mobile phone will be present at any forecourt incident. There have been specific incidents where individuals who have experienced flash fires as they refuel were known to have been also carrying a mobile. Richard Coates explained that the first incidents he was involved with on BP's behalf were the December 1999 fire incident on a gas station in Santa Fe New Mexico and a short time later one in Rockford, New York. Both initially attributed to a cell phone, because the instrument was in the hand of the person when the flash fire occurred.

Firstly it is necessary to explain the curious, recent, and distinctively American phenomenon of static fires. Very strangely, for the layman (and even for many who's job is putting out and understanding fires) it is possible for a small charge to ignite petrol on a forecourt, sometimes leading to an explosion. This has nothing to do with cellular phones, but is caused by static build-up.

The following is a technical explanation for how static can, and has caused forecourt fires:

> Another potential source of ignition for petroleum vapours is electrostatic discharges. For an electrostatic discharge to occur it is necessary that the positive and negative charges on an object are separated, that some of the separated charge accumulates on an object and that the accumulated charge is then able to flow through the air to some other, usually earthed, object. So, let us consider the example of a motorist who slides across the seat of his car and steps out on to a petrol station forecourt. As he slides across the seat, it is entirely possible that the charge on the seat and the man will separate. The man will, therefore, accumulate some charge. The amount of this charge can be measured and calculated (to some extent). Should anybody wish to undertake the calculations, a typical figure for the capacitance of a human body is 200 picoFarads. When the charged man brings the tip of his finger close to some earthed object, for example the petrol pump casing or the bodywork of his car, the charge can flow from him to the car. This occurs when the voltage between the man and the earthed object is sufficient to cause the air to break down. Once the molecules in the air have ionised, the charge can then flow through the air, producing an arc. The ionisation of the air meanwhile initiates the combustion process. Arcing occurs when the potential difference between the man and the earthed object is sufficiently high for the voltage gradient through the air to be around 1,000 volts per millimetre. Whilst this may sound very high, in practice it is quite easily achieved when a man's finger is within a fraction of a millimetre of an earthed object. The energy dissipated in such discharges can be of the order of several milliJoules. We are probably all familiar with discharges of this magnitude. They can also be produced by removing clothing or walking across carpets with 'incompatible' shoes.

The ignition energy required to ignite petroleum vapours is typically around 0.25 milliJoule. Consequently, fairly ordinary electrostatic discharges possess sufficient energy to ignite flammable mixtures. At the same time it is worthy of note that any charge that has accumulated on a body can quickly dissipate by flowing harmlessly to earth. So, for example, if the man sliding across the seat of a car were to become charged but were then to walk several metres on the forecourt, it is likely that the charge would seep away from his body, through the soles of his shoes and into the concrete of the forecourt without any risk of the man retaining a significant amount of charge.

Static fires have happened principally in the USA because:

- Most importantly 'latching' is allowed, at least in some States, where the pump is fixed to the tank, allowing the driver to re-enter the vehicle (a number of states in the USA have banned the practice including parts of Florida and New York States)
- Fuelling is much slower in the USA
- there are no anti-static additives in American petrol. Given the amount of time it takes to fuel it is not unusual for individuals to re-enter vehicles.

Unsurprisingly, this has happened most frequently during the Winter months in especially cold parts of the USA, as people want to keep warm by getting back into the car. There is also something of a sociological curiosity in that most incidents have involved women. It has been speculated that women appear more likely to re-enter vehicles, but also that they are more likely to wear synthetic materials.

Having noted that the UK does not suffer from fires caused by static induced by the latching system, there are the odd occasions when due to a combination of circumstances a static induced flash fire can occur, but again nothing to do with mobile/cell phones. This incident at a BP station on 15th march 2000 at 12:30 is an example where a male customer driving a 4x4 Range Rover, pulled up by pump, got out of vehicle and as he was opening fuel cap on vehicle, there was a ball of flame. At this point he had not touched the pump. Staff followed emergency procedure 999 - the site was closed - the fire brigade attended. The Hertfordshire Fire Service attended the incident and concluded that the cause of ignition was static discharge. The customer was wearing a nylon shirt. He had got out of the car (nylon car seats?) and immediately opened the filler cap. The car door was left open. A child was inside. The car was a Suzuki and it's fuel tank was almost empty which may have contributed to a pressure build-up. Flames shot towards the customer and his arm and hand were burned. (red and slightly swollen) He was quite traumatised. He mentioned afterwards that he does experience static "shocks" from the vehicle on a regular basis. Fire Service applied first-aid gel to his burns. Customer drove his car from the site to get further treatment. No fuel was dispensed to him. So a static fire can happen without the latching being an issue.

The contrast is most apparent regarding the developing world where there have been no verified forecourt incidents (although still incidents caused by more obvious problems such as individuals looking into fuel tanks with a lighter or match to check how much remains!). This is for the simple reason that refuelling is still mainly carried out by pump attendants. Certainly they do not have latching.

According to the world’s principal expert in petrol station fires, American fire personnel continue to be instructed that mobiles could trigger fires, leading him to see better fire personnel education as an important part of any strategy to demystify this issue. And regardless of any issues of technical expertise, it is clearly easy to blame a mobile phone for an incident that might otherwise require more extensive investigation.

Reflections on the Mobile Forecourt Myth

In the UK, at least, and apparently only recognised by a handful of experts such as Brian Baker from the Petroleum Officers Licensing Association, since 2004 the ban effectively now remains in place because of the potential of mobile usage to distract users, rather than its potential to cause an explosion. Yet this knowledge is not widely shared and it appears to still be the case that attendants enforce the ban on the previous basis. Further, it is clear that there is little dissemination of this change or the research disproving the possibility of cell phone forecourt fires within the petroleum industry internationally.

In considering reasons for the perpetuation of what is effectively a myth about cell phones and forecourts fires, it can be suggested that it is the lack of any will to clarify the situation with regard to the basis for a ban on forecourt cell phone usage that perpetuates the ban – to all intents and purposes still because of its alleged potential to cause an explosion. Overall, it can be argued that although the Internet rumour has played a role it is the largely precautionary response of cell phone manufacturers and gas station operators that has perpetuated the ban.
In practice it appears easier to allow restrictions to continue on a largely precautionary basis (of preventing even a remote possibility) than to clarify the situation publicly and thereby create debate. Warning signs on many mobile phones advise against their usage in petrol stations. As long as such warnings exist, an oil company representative might argue, it is hardly consequential whether they seek to change public understanding of the issue.

There also remains a fundamental technical problem in that it would be difficult to distinguish retaining a restriction upon cell phone usage because of the problem of distraction from the discredited basis that it could cause an explosion; the sign would remain the same. What is more questionable is that there appears to be an element of simple pragmatism in allowing forecourt attendants to continue to dramatically state that ‘they might cause an explosion’ when questioned further by customers. Perhaps it is easier to allow attendants to quickly and perhaps decisively enforce a ban by, effectively, lying than it is to explain that a distraction might be caused. There appears to be an element of calculation based on the perception that forecourt cashiers are typically very unmotivated, low achieving whose native tongue is not English. At the same time it remains the case that many remain unaware of the research effectively disproving the possibility of cell phone fires, so it is hardly surprising that some petroleum vendors would still advise their employees on a potential fire, rather than distraction basis.

It is worthwhile remembering that there are negative consequences to the perpetuation of the mobile ban at forecourts on the basis that they might cause an explosion. As was outlined above, these are that it leads to physical confrontation, confusion over real and only phantom risks, and adds to the wider sense of danger which apparently has no basis in experience. There is something of an irony that it was rumours circulating on the Internet that led to an attempt to scientifically clarify the situation. Unfortunately it appears that pressures have not been of a sufficient magnitude upon oil companies to go further and ensure that the public are better informed and mobile phones ‘cleared’ – at least on the forecourt.

What is striking is the level of confusion which results from a lack of willingness to clarify this issue, with precaution operating as a line of least resistance. Different authorities in different parts of an oil giant like BP are pursuing quite different accounts of the issue. BP’s Richard

Coates, exceptionally, has taken it upon himself to lead one-man crusade to explain the real science behind the issue.

Overall, this is a precautionary tale about so easily adopting a precautionary approach. Even when a risk is effectively disproved it becomes difficult to change the approach that has been established. Particularly when any negative consequences are relatively intangible (although there is a case for saying that physical confrontations on the forecourt are hardly intangible) there is little drive to correct misunderstanding.

Some further Issues Raised:

- the lack of any mechanism through which can generalize the necessary knowledge and precautions. Latching is banned in some parts of the USA but no means through which this practice can be established as common practice throughout the USA. Problem here is the group in charge of licensing facilities

- A similar problem is evident from the decentralized nature of the petrol business. At BP, as with the other major oil companies, the vast majority of stations are franchised out in one form or another; there are very few stations entirely under the control of the companies themselves and therefore easily subject to changes of practice and instruction. Attendants therefore undergo a wide variety of instruction

- Old fashioned case of lack of expertise. It has become fashionable – particularly in sociological circles to contest the superfluity of expertise and elevate lay knowledge. In this case both expert and lay knowledge are clearly deficient

- But the actual possibility of a static fire in the USA only creates the possibility of such a rumour/hoax. The more direct contributor is an organisational culture of instant communication and elaboration.
  The organisational sociology of this rumour circulation, according to the individual experts who track these stories is that, particularly younger personnel at oil companies – accustomed to a culture of instant communications (and equipped with considerable IT skills making it possible to quickly merge information) instantly pass information and video clips on. Yet this can be seen to be more than a technical issue about IT skills; there is arguably a lack of scepticism and need to carefully check things even if takes time. Where a youngster at BP gets sent a message – perhaps with an attachment showing a dramatic forecourt fire – very IT literate – so upgrade graphics and elaborate – trace back to far less impressive video from Algiers! Sends it on immediately without a second thought. Two of the recent hoaxes have been sent on from the US giant, Haliburtons. So quickly done – but long time, if ever, to correct!