

Claims by Engineers

Problems that engineers encounter when claiming.....and the trouble these cause to insurers.

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IMIA CONFERENCE – ROME 2004

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Claims by Engineers

On and off the rails

In their everyday working lives engineers are engaged in designing, supervising, specifying, maintaining and operating. They learn to apply codes of practice, design rules and formulae. Their knowledge is applied to find cost-effective solutions to problems. This means that they are generally in control of the outcome of their work. Few have experience of failures or finding solutions to situations where codes and established formulae have proved inadequate. They develop recognition of competence in others and generally do not oversell their own expertise. They are trained to weigh multiple factors, primarily technical and economic, and to arrive at considered judgements, which are in the best interests of their client or employer. With the exception of those engineers who specialise in insurance or legal aspects of engineering, most have only a passing interest in the insurance policies and contracts that provide a framework for their activities.

Case History 1 – Engineers expect projects to run smoothly and be completed successfully

A reservoir barrage was being built in a developing country across a river. To facilitate construction, which dammed the river, a local civil works contractor had constructed a bridge for earthmoving plant out of whole felled trees lashed together with rope.

The barrage had been designed and supervised by a foreign engineering consultancy and was financed under an aid scheme. The consultants sent engineers to site from their home country. The consultant's senior engineer on site had initially objected to the contractor's temporary bridge on the basis that it was not designed in accordance with conventional engineering principles. The contractor however countered that this type of structure was traditional in the area and in any case it was a temporary structure for which he was responsible and it was the contractor's plant that would be lost if the bridge collapsed.

One night the barrage suffered a catastrophic piping failure in the soil beneath the concrete side walls. After its destruction, the contractor quietly pointed out that the unconventionally designed bridge (on which both contractor and consultant were standing surveying the scene of devastation) had lasted longer than the engineer's barrage.

What the foreign engineer had not done was to pay attention to the assumptions about soil conditions incorporated into the barrage design based on poor site investigation information. Had soil properties been checked on site during construction and compared to the assumptions in the design the loss could have been avoided.

Generally they expect the projects they are involved in to run smoothly and to be completed successfully. Uncertainties tend to be focussed on cost and programming overruns, commissioning hiccups and breakdowns.

It is perhaps therefore little wonder that when the unexpected pushes engineers seriously off course, they do not always react with the measured consideration that typifies most of their working activities.

Case History 2 – Engineers do not always act with measured consideration

During the construction of a hydro-electric project a failure occurred in the lining of a high pressure inclined shaft feeding water into a turbine hall. The shaft had been bored through rock and the lower section was lined with steel. The upper section, however, was lined only with sprayed concrete because the designers had assumed that there would be adequate stress in the rock to resist the pressure of the water in the shaft. The failure of the sprayed concrete lining took the form of a longitudinal split, which allowed water to percolate down through the rock and enter the turbine hall under pressure through its walls.

When faced with this problem a senior partner from the design firm initially instructed the contractor to fill the split in the sprayed concrete with flexible polysulphide (bath sealant). When this did not work he instructed them to bolt a rubber strip across the split on the inside presumably believing that the water pressure in the shaft would push the rubber so tightly onto the concrete that a seal would be formed. Not surprisingly this also failed at which point the firm reverted to engineering. A steel lining was eventually extended along the full length of the shaft.

Insurers are often surprised to learn that in most significant engineering insurance claims, the engineers caught up in them will most probably have no previous experience of a sizeable insurance claim. Whilst the names of large engineering companies are well known to insurers having appeared regularly on claims files, these firms have large numbers of engineers within them. Just because one department may have had experience of a claim in the past does not mean another department will have had similar experience. In addition, personnel move constantly. Not only that but experience of one type of claim (say operational machinery breakdown) will not necessarily be very helpful for the engineer when faced with another type (say a professional indemnity claim for alleged negligence). The requirements of different types of claim vary considerably. The extent of cover and the exclusions will also differ significantly and so do the duties of the insured when faced with a claim. Initially engineers may not differentiate between claims to insurers and contractual claims for extra costs from contractors, which use very different procedures.

Having lost control temporarily as a result of an unexpected loss/failure most engineers want to regain it rapidly both technically and economically. This objective tends to be more problematic than “normal” engineering. Owing to the fact that the

failure will have been unforeseen there are unlikely to be any prescribed procedures to follow to recover the situation. Inevitably the engineers who were in control at the time of the loss may feel uneasy because they may justifiably or unjustifiably fear accusations of incompetence. Where injuries or fatalities are involved they may fear criminal prosecution.

Immediately after a loss there is likely to be considerable pressure to re-start operations or to catch up on a delayed construction programme. Insurers will however be looking for: evidence of the cause of the loss to be preserved; to understand what happened; and also to keep alive any prospects of recovering against a third party. The destruction of evidence, motivated by a desire to make progress, can obscure or delay the truth being uncovered and can damage or destroy insurers' recovery prospects.

Case History 3 – Repairs often have to be undertaken before a conclusion on the cause has been established

During the pre-commissioning tests for a hydrocarbon processing plant a hole was discovered in the wall of a stainless steel pipe intended to carry highly flammable process feedstock under pressure. The presence of the hole undermined confidence in several kilometres of similar pipework. Examination and measurement of a number of pieces of similar pipe suggested a manufacturing defect owing to below specification wall thickness and weight. The ensuing crisis threatened commercial relationships between pipe manufacturer, supplier, contractor and client.

A more rigorous examination of the suspect pipe specimens cast doubt on the accuracy of the method used to check the specification compliance of the pipes leaving only the holed pipe with an unquestionable defect. Closer examination of the metallurgy of this pipe section suggested that it was not part of the same manufacture as the remainder of the pipe and appeared to have been mixed in with project pipework by accident in a fabrication yard between the pipe supplier and the project site. Replacing one bend rather than several kilometres of pipework built into a completed process plant therefore solved the problem.

Regaining control after a failure can be much more difficult than taking control at the start of a project. It requires the engineer to be able to demonstrate to senior management, owners and others that the cause of the loss is now fully understood, that the solution will not result in a repeat of the previous failure and that measures to minimise the risk of failures have been considered and implemented. Inevitably the confidence of others will have been dented by the failure. Before a loss, an engineer may have faced the need to demonstrate that his or her design, specification or procedure met the requirements of the relevant code of practice. After a failure he or she may be expected to demonstrate that the modified system is safe and will avoid a repeat of the loss. This can be a much more difficult task particularly if the pre-loss design, specification or procedure was thought, wrongly, to meet the requirements of the relevant code of practice. Often repairs/modifications post loss have to be

undertaken before a final conclusion as to the cause has been established and this can further add to the engineer's difficulties.

The engineer in the front line may not in fact be a design engineer at all but may find him or herself faced with a difficult re-design job. A creative and achievement focussed engineer before the loss may need to change to investigative and remedying mode post loss. This can require unconventional thinking to identify solutions to the failure and its consequences. If the engineer involved finds this type of assignment difficult, money can be wasted on inappropriate solutions or even on further damage.

Friend or Foe?

From having been in charge of a situation immediately before a loss occurs, afterwards engineers may find themselves suddenly faced with a battery of professional interferers including:

- Senior managers
- Owners
- Insurance Brokers
- Loss adjusters both local and for reinsurers (possibly several sets representing different interests such as material damage insurers, business interruption insurers, employers liability insurers, public liability insurers, professional indemnity insurers etc.)
- Health and Safety Inspectors
- Regulators
- Risk Surveyors
- Accountants
- Lawyers
- Bank representatives
- Expert Technical investigators

To each of these, the engineer is expected to disclose different information. Some will require the engineer's full understanding of the situation, whereas to others the engineer will be expected to be a little guarded in his or her statements. This particularly applies when the cause of loss appears uncertain because a rigorous cause investigation may produce an unexpected result. It sometimes applies even when the engineer feels he knows what the cause was because he may be wrong.

Against this background the engineering insurer is simply looking to the engineers involved in the case to tell the truth. For an all risks/operational insurer some of the simplest claims to deal with are those where an engineer openly admits he made a mistake. After all insurers expect mistakes to be made from time to time and expect to cover the consequences. It can however be a brave act for someone who is expected to be in control and at ease in their working environment to acknowledge that they lost control or were guilty of poor judgement.

Denial

When faced with an accident some engineers find it hard to accept that a project or operation for which they were responsible has gone seriously wrong. Even after accepting that something has failed they sometimes believe that they can solve whatever problem has arisen in a short time without the need to involve others.

Engineers are after all problem solvers. Denying to themselves that they need to involve others, particularly insurers, is a recipe for late notification and sometimes can result in worsening of the damage. An example of the latter is the relatively common occurrence of a machine with an actuated alarm being repeatedly re-started with the alarm having been over-ridden because the engineer operating it thinks it is false or of no consequence.

Case History 4 – Denying to themselves that they need to involve others can result in worse damage

During commissioning of a gas turbine, faults were found in the control system software resulting in what was thought to be repeated false alarms in the lubrication system failure warning system. These alarms were routinely over-ridden/ignored by operators as there were so many of them. This included over-riding a notification when the lubricating system did fail resulting in the turbine/generator rotor running for several hours without lubrication. Serious damage to journals and bearings resulted in several months of delay and several million dollars of damage whilst the turbine/generator was repaired.

Lost in translation

Engineers have always had a reputation, sometimes undeserved, for talking in jargon and being unintelligible to the technically untrained. This failing can however apply to others with engineers being the victims rather than the perpetrators. Sometimes engineers fail to understand what members of other professions, such as insurers or lawyers, are telling them. This can have a number of different adverse consequences in the aftermath of a loss. Insurers can be supplied with large quantities of irrelevant information, settlement of claims can be delayed and unnecessary further claims/actions can be triggered. Whilst engineers may initially understand what they are being asked for and why, they can lose the thread of the arguments that insurers and lawyers are pursuing – particularly where hypothetical situations have to be considered. This can make it difficult for them to keep track of the questions that insurers are interested in answering. Questioning can be traumatic for engineers as it is likely to require probing of the possible errors that an engineer might have made. A defensive response is natural. Insurers may also ask the engineer to speculate on what might have happened to help them direct their investigations and how matters might be resolved in future to aid recovery. Asking engineers to switch between telling the absolute truth in formal statements and then approximating and speculating during questioning can easily lead to confusion. Trying to elicit the truth from a defensive engineer faced by a number of people talking in insurance and legal jargon is not an easy task.

Moral Judgements

Engineers are used to weighing two sides of an argument and then deciding which is right or offers the most satisfactory outcome. All major engineering work is the subject of a contract and almost all projects are the subject of insurance. Contracts

and insurance deliberately adjust the legal framework for a project or operation that would exist without them. Many engineers find contracts and insurance policies difficult to follow. The determination of costs can be complex and something to be handled by a quantity surveyor or cost analyst. Contracts are often lengthy and written in complex language regarded by some as consisting of small print only relied on by some with the intent of avoiding their moral obligations. Some of their terms only make real sense when set into the context of a legal environment for the legally trained to understand. This can result in such a document being largely ignored by the engineers until the time it dominates a situation. A lack of understanding by engineers of the provisions of the insurance and contracts that apply can result in the insured initially failing to take the correct legal stance with other parties.

Case History 5 – A lack of understanding of contracts can result in a failure to set up the correct legal stance

A gas turbine suffered failure of its lubrication system shortly after it had been made operationally active but before the originally scheduled operational date. The manufacturers/suppliers were still on site to deal with warranty obligations. Substantial repairs were undertaken by the manufacturer/supplier as they associated the failure so close after acceptance as being their fault. They then attempted to recover the cost from the Erection All Risks insurer. The contract for the supply of the unit however only required the supplier to provide insurance up until acceptance after which it had been anticipated that the client would have operational machinery breakdown insurance. By ignoring the provisions of their contract the engineers working for the manufacturer/supplier had taken upon themselves the cost of remedial works, which should have been paid for by the operational risks insurer.

Normally the intention of those drawing up the contract and/or insurance covering a project or operation is to minimise the chances of disputes or costly double insurance. This may require liabilities and responsibility for obtaining insurance to be transferred between parties.

Such transfers mean that when an accident happens it can be the responsibility of a party who is not at fault (or their insurers) to bear the costs resulting from the loss. Such a position may be in direct conflict with the moral judgements that we all make in the immediate aftermath of a disaster. Engineers are likely to be faced with outraged third parties (perhaps also engineers with little insurance or legal training) if they immediately seek to deny liability when the fault is obviously theirs or their employer's. It can take considerable courage to point out to an angry or disappointed client that they must look to their own insurance or resources to overcome a loss simply because of what it says in a contract even though technically this may be the correct stance.

Case History 6 – Liability and responsibility for obtaining insurance may have been transferred between parties

An air conditioning system for an electronics warehouse building began to corrode in a very hostile environment even before the building became operational. Without consulting insurers a senior member of the staff of the company responsible for managing the project made a clear statement that the cause of the problem was the work undertaken by his company. This was before a full investigation of the problem had been completed. In fact responsibility for the specification of the corrosion resistance of the air conditioning lay with a combination of sub-consultants and suppliers who had their own insurance. The project management company's insurers would, under normal circumstances, have dealt with the claim and taken subrogated rights against the sub-consultants and suppliers. The project management company's claim was however repudiated because of the admission of liability leaving the project managers to sort out the mess themselves.

Failure to set up the correct legal stance early on, can mean insurers have to consider costs incorrectly accepted by the Insured or claims that are flawed. This can lead to inappropriate expectations in the insured's senior management or other parties leading to unjustified resentment of insurers and unnecessarily awkward negotiations.

Picking up the pieces

Often it is the engineer who was involved in the failure that has a central role to play in the recovery. Apart from finding a technical solution there is the difficult business of allocating costs correctly. After a failure, project or operational costs will need to be separated from expenditure on repairs. As a loss can create an opportunity to modify or upgrade part of a plant, post-loss modification costs also have to be identified and separated.

Expenditure approval procedures will also have been made more complex because of the need for the input of insurers who will be paying for part or all of the work. If the engineer in charge of reinstatement does not keep adequate track of the costs this can result in claims that are difficult, slow and expensive to settle. Sometimes, particularly in the early stages of a claim engineers find it difficult to identify who are the right people to deal with and who has authority to make decisions. This can particularly apply when a reinsurer based in a different country from the loss location is involved. Failure to get through to the right people can cause considerable delay and unauthorised expenditure taking place.

Case History 7 – A loss can create an opportunity to modify or upgrade

Following a major power station fire and subsequent contamination, the owner/operator decided to use the opportunity and funds resulting from the claim to upgrade the station. A new state-of-the-art control room was added to replace the previous one and the station re-configured so as to allow it to operate as a spinning reserve (which it had not been capable of pre-fire). Whilst costs of work were recorded there was little effort to establish the cost of a straight like-for-like replacement as allowed for within the insurance policy. Engineers involved in the reinstatement work were too busy with the configuration of the new setup to undertake a division of the costs between like-for-like and betterment and this resulted in a delayed settlement and increased adjusting costs.

Losses inevitably create additional workloads for an insured. Not only do they have to cope with what was planned (pre-loss) but they have the additional burden of investigations, designing and implementing repairs and in some cases modifications. They will also have to arrange to finance the cost of repairs until payments from insurers come through, assuming they do. All these tasks can impose an enormous workload on the engineers at the heart of the situation. Some insured companies manage recovery well and bring in adequate resources, others do not. Where the recovery process is not well managed it can result in a slow response by an insured to questions from insurers, which can delay settlement of the claim. It can also lead insurers to have to bring in extra assistance at extra cost, which would not be needed if the recovery process was well managed.

After a loss, engineers are also frequently faced with uncertainty as to whether insurers will or will not pay for the cost of repairing damage. There can be prolonged cause investigations or complex liability issues that take time to resolve. Projects or operations cannot pass into suspended animation whilst these questions are considered. Sometimes unfortunate assumptions are made by engineers of the probable outcomes and by reporting these, the engineer can sometimes set up unrealistic expectations in the minds of his or her senior managers. When the issues are resolved these senior managers may have unjustified dissatisfaction or even anger towards their insurers because their expectations have not been fulfilled. They can be faced with the difficult task of explaining to a board or to investors why money, which they budgeted to receive from insurers, has not materialised. Far better for the uncertainty of the outcome of a claim to be over-emphasised at the start.

Relationships

When a loss occurs a number of relationships can come under strain. The relationship between insured and their insurers is only one of these. An unexpected

upset to a construction project or an operational installation is undoubtedly annoying to clients, shareholders, customers and others. Most people however recognise that losses are almost unavoidable from time to time. The way that an organisation and its engineers responds when faced with a loss situation is perhaps more important to the preservation of a relationship than the occurrence of a loss.

Frequently engineers and managers see their relationship with their customers as more important than their relationship with their insurers. They deal with their customers on a regular basis whereas their insurers are usually in the background and only emerge when something goes wrong. The identity of their insurers might also change regularly.

Engineers can also have valuable relationships with their suppliers on whom they may be almost totally reliant for future support. If a power company has bought a particular brand of turbine they cannot afford to fall out with the supplier since they will inevitably require spares and service during the life of the equipment. For very high technology equipment there are sometimes no alternative service and support organisations.

Losses sometimes arise because of failings in the design, workmanship or materials of an equipment supplier. Under these circumstances insurers will be looking at the prospects of making recoveries against the supplier. As any action would be on the basis of a subrogated recovery in the name of the insured, this can create a real dilemma for a company's engineers. Should they assist their insurers and possibly upset their suppliers or should they try to protect their suppliers and risk being in breach of their obligations to assist the inquiries of their insurers? Lack of support for insurer's inquiries need not be blatant which can make it very difficult for insurers to prove that a policy condition has been breached.

Divided loyalty may also apply to the negotiation of repair contracts or the purchase of spares needed after a failure. A single supplier situation can place enormous commercial power in the supplier's hands not only in relation to the price to be charged but also in the scheduling of the repair work. It is easy for a supplier to plead that they have a full order book when asked to undertake repairs quickly to minimise business interruption costs. There will inevitably be a temptation for them to press for extra payment for accelerated work particularly if it is clear that an insurer will ultimately bear the cost. Where a loss creates the opportunity for improvements or upgrades there will be the requirement to negotiate a price for that work which will not be insurer-financed. A company's engineers may therefore be faced with negotiating the purchase of a number of items and services at the same time. Some will be paid for by insurers and some by the engineer's employer. It would be easy to be tempted to load one at the expense of the other. Such practices can be difficult to track since insurers are unlikely to attend every meeting between insured and supplier but the consequences in terms of the overall cost of repairs/spares will usually be seen. If loading is detected it can result in strained relationships between insurers, insured and supplier. Where such practices have been employed, unless an insurer can clearly identify where they are being over-charged the cost of a claim will inevitably be higher than it should.

The impact of bad practice on claims

Fortunately for insurers some losses are inevitable, otherwise there would be no demand for insurance. How losses are handled by those insured can make an enormous difference to the outcome of a claim for insurers. Bad handling can:

- Increase the size of a loss particularly if repairs are delayed during a period of business interruption
- Cause unnecessary costs in the form of fees for adjusters, accountants, solicitors and experts
- Cause waste on inappropriate solutions
- Impede an insurer's ability to get at the truth or cause delay uncovering the truth
- Prejudice an insurer's opportunities to recover from third parties
- Damage valuable business relationships
- Delay the resolution of claims
- Divert resources into unproductive work – following false trails
- Trigger unnecessary further claims
- Cause insurers to be unjustifiably criticised

Is it all the engineers' fault?

Insurance contracts are the expression of relatively complex and sometimes counter-intuitive positions. It is, for example, unusual except where insurance is concerned to enter a legally binding contract on the basis of utmost good faith. Most of us are used to being in the position of "buyer beware". Similarly it is unusual to find a contract, which covers every eventuality except those specifically excluded as in the case of a CAR/EAR Policy.

Insurance policies do not normally come with a book of instructions or a user's manual. Since insurance coverage is rarely in regular use, most buyers of engineering insurance see little need to train their engineers in the workings of insurance coverage. Some risk managers and insurers prefer engineers not to be too conscious of the insurances that a company holds since they fear this might encourage claims or risk taking.

In order to minimise reliance on insurance (and thus keep premiums down) companies are often protective of their coverage, not volunteering it but making it an option of last resort. Insurers try to encourage such attitudes since this helps to minimise their losses. Is it any wonder therefore that when an operational loss occurs, operational engineers may not see the need to report what has happened to insurers as a first priority? The reward for this frugal approach to making claims, however, can be anything from disapprobation to denial of cover for late notification.

If insurers felt the need to make their products more user friendly they could, for example, provide in simple language some explanations of:

- The purpose of engineering insurance

- The logic behind the deliberate distorting effect that insurance policies and contracts have on moral obligations and natural justice

This could be in the form of an explanatory preamble to insurance policies (which is not part of the policy wording to allow it to use simple/clear language rather than jargon/legal terms).

Making a better job of it.

In an ideal world all engineers would have a considerable knowledge of insurance policies, insurance practice, contracts and the law. In reality of course they cannot be experts in every field. Those that find themselves suddenly propelled into the middle of a complex claim are unlikely to have time to undertake a training course, although some will no doubt have found there is no better way to learn than through experience.

Support from colleagues with the right training and experience can prove invaluable in steering the engineer in the right direction and taking some of the additional burden that a loss creates. Insurers, loss adjusters and lawyers can help by trying to see things from the engineer's point of view before they press ahead with trying to get answers to the numerous questions they are bound to have. They should be prepared to provide some basic explanations of insurance, contracts and the law in such a way that the engineer does not feel foolish and is encouraged to ask for further help when it is needed. Whilst at first this may seem only to be in the engineer's interest, an informed engineer is likely to be far more valuable to them than one that is struggling in the dark.

After a loss some engineers find it hard to accept that they have to relinquish control of a situation to others even if only temporarily. A greater degree of trust in the skills and motives of the lawyers and insurers that set up policies and contracts would assist. Whilst the logic behind some insurance and contractual arrangements may not be immediately obvious it will almost always emerge given time for examination and understanding. Procuring a major engineering project is not the same as buying something in a shop. Different and far more complex rules apply for good reasons and dismissing them as "small print" does a dis-service to those who have spent years refining and developing them. Insurers and lawyers do not work with specifications and operating procedures. They do however have their own codes of practice and rules, which they build into policies and contracts and these are every bit as refined and precise as those used by engineers.

When an accident happens the engineers involved are bound to find the process of sorting out the resulting loss stressful. The easier and clearer the claim process is made for them by insurers, adjusters, lawyers and employers the fewer problems they will face and the better the result is likely to be for insurers.