USING THE MEASUREMENTS

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Most organisations report accidents/incidents in some form, even if only to meet legal requirements. More enlightened ones include "Near Misses" in this process. Such reporting is often seen as a chore rather than an essential part of the loss control programme. This is particularly true at the level of the "reporters" – typically first line supervision. This paper outlines how an effective reporting system can turn this negative into a positive to become an essential tool for performance improvement. It concludes with a demonstration of a powerful web-based product suited to this application.

Accident reporting; Performance measurement, Accident Analysis Software.

TRADITIONAL REPORTING SYSTEMS

We are all familiar with the routine task of reporting unwanted events within our work area. At the earliest, basic level, this was filling in the "Accident Book" – which is still required of us, with serious, specified events having to be reported to the authorities. Injuries were entered in the book, together with the briefest detail of what happened and the names of anyone involved. Developments from this simple process followed two key routes, one was to collate the information to look for trends. The other was the realisation that not all losses were injuries, so "incidents" or hardware damage came to be included. From this grew the concept of "near misses" or, more accurately, potential losses, being a valuable learning tool to prevent further unwanted events. In parallel with this, the increasing compensation claim culture has driven organisations to record more and more detail related to the occurrence.

Clearly, early systems were paper based, allowing limited use of the data. This tended to be:

A monthly statistical report to management, typically including; number of Lost Time Accidents (LTA), Lost Time Accident Frequency (LTAF), graphs showing how the frequency was moving and time since the last LTA. A short description of the more serious events might be included. There may have been analysis by someone "responsible for safety" to look for trends in accident types, parts of the body injured, areas of the organisation having the accidents, etc.

The emphasis was very much on recording the circumstances surrounding an unwanted event, with minimum investigation, except for major accidents, and at best, identification of immediate causes. In well run organisations of current average size, too, they become meaningless, since there may well be less than 1 LTA/annum.

LATER DEVELOPMENTS

In the last quarter of the 20th century, two developments have come together to give us much more power to use unwanted event reporting to improve loss control performance. The first was the work done by the International Loss Control Institute and others on accident causation and hence the way we can use sound investigation to establish basic causes and thus prevent a recurrence.[1] The second has been the rapid changes in computer technology

which allows gathering more data more easily, manipulating it more effectively and disseminating the results more quickly and widely.[2]

USING THE DATA

Any information gathered, however detailed and comprehensive is of no value if it is not used to improve loss control performance and hence that of the business. The objective of any reporting system should be to gather data and process it in a way that can strengthen the improvement programme.[3] Typically, it can be used to help in:

- Measuring performance
- Forming a basis for effective investigation and establishment of basic causes and hence areas of deteriorating control
- Highlighting trends
- Benchmarking
- Defining priorities
- Identifying risks

MEASURING PERFORMANCE

To achieve the objectives set out above, information needs to be translated into more creative performance indicators than the traditional ones, although these will still be necessary for some purposes. Some examples (which we have coined the expression "KUEPI's" (Key Unwanted Event Performance Indicators) are:

UNWANTED EVENT REPORTING FREQUENCY

It is now widely recognised that the difference between an injury, damage to equipment or a "near miss" is luck, hence the need to record all unwanted events. This is the list that will give us the maximum learning opportunity. If we then take the number of such reports and turn it into a frequency by dividing by a number of worked hours, we have a performance indicator that tells us something about the loss control culture of the organisation or given sections of it. A low number can demonstrate a lack of awareness by employees, a reluctance to report – perhaps a fear culture in place or a "so what" attitude to safety. We know that the unwanted events are happening, to learn from them we need to know what they are. A good starting target is 2 unwanted events reports/employee/annum.

AUDIT/INSPECTION REPORTS

There are many occasions in the working year when we examine the way we do things in the loss control area. This can range from the formal, external audit through safety team monthly inspections to the supervisor's daily job walk, yet we seldom turn these into proactive indicators of performance. The formal audit may give us a score to compare with the last one but beyond that, there is often little "measurement". There are many opportunities here:

- How many breaches of safety rules were observed/hour – just a tick for each one in a note book during the tour.

- How many unsafe conditions were observed/hour.
- How many examples of good practice were observed.

PRODUCTION LOSS OR DOWNTIME DUE TO UNWANTED EVENTS

Readily understood measures of success by everyone within an organisation are "How much have we produced?" or "How much downtime have we had?". To demonstrate how these values have been affected by unwanted events, therefore, can be a powerful tool. Again, generation of the indicator can be quite simple – an estimate of lost production or time on the report form which is then translated into the percentage of available output or on-stream time.

COST OF UNWANTED EVENTS

This is more difficult to establish than the production loss measure due to the range of costs which might be involved. There could be output loss, as above, repair costs, additional labour, investigation costs, compensation payments, increased insurance premiums and many more. Even if only estimates are made, rather than the actual costs, it is well worth the effort to demonstrate the impact on the business of failing to control our operations. Conversely, it is valuable to be able to show that investment in safety measures such as training have prevented or reduced a large loss. It is illuminating to show these figures as a percentage of turnover, operating costs or profit.

BASIS FOR INVESTIGATION

It has long been recognised that the best way of preventing recurrence of accidents is to establish the basic causes by effective investigation, then correct the deficiencies. It follows from this that **ALL** unwanted events should be investigated, the depth of examination reflecting the potential harm which could arise. A correctly designed reporting system is a vital first step to carrying out investigations in a way that not only gets to the right answer but keeps the process manageable. In addition to the typical description of conditions, witnesses names etc., therefore, questions should be included such as:

- Is there an up to date Risk Assessment for the task being carried out?
- Was a Permit To Work issued?
- Was the person trained/licensed to carry out the task?

The use of a **potential** severity rating system, typically a matrix one, is valuable here to guide on the depth of investigation required for each event.

HIGHLIGHTING TRENDS

We have already mentioned that some trends have been followed traditionally from the limited information available. The more powerful tools we now have allow us quicker analysis and hence more options to spot changes where correction can further improve performance. Examples are:

MOVEMENT IN "KUEPI'S"

Any of the chosen performance indicators can be turned into trend graphs, preferably on a rolling average basis to highlight improvement or deterioration in a particular measure

BASIC CAUSES
This is the most powerful driver for reporting and from the investigations described above, we can draw up lists of deficiencies within the management system that require correction.

MOTIVATION SHIFTS
This can be identified from movements in reporting frequencies, unwanted events occurring where the correct work method has been defined and training given etc.,

CHANGES IN EVENT SERIOUSNESS
Analysis of the potential severity ratings can quickly show whether current events are drifting to potentially more serious losses or improving as a result of the application of the loss control programme. This can be done by the simple recording of how many reports in a given category or applying a weighting process.

BENCHMARKING
It is a natural reaction not just to know whether your own unit is improving or deteriorating but if the right standards are being achieved and how you compare with others, both within and without the organisation. One of the difficulties in doing this traditionally has been the disparity between operating unit size and activity type. The KUEPI's described above go some way to overcoming this problem.

One of the additional benefits of Benchmarking is that if you can agree common performance indicators with others in your industry, trade association or geographical area, not only can you measure where you stand with regard to the outside world, you can trade experiences mutually to improve performance.

DEFINING PRIORITIES
It is self-evident that not all corrective actions can be put in place immediately and with increasing cost pressures, the need to prioritise these actions becomes ever more important. Meaningful performance measurements allow this when combined with a potential severity rating system for the harm which could arise from an unwanted event. Clearly, we could all deduce that preventing an unwanted event that could harm many people would take preference over one which might cause minor disruption to the operation but in most cases the options are not so obvious. It is important, therefore to have a disciplined, objective method of establishing priorities. Any method needs to extend beyond unwanted event reporting, since corrective actions arise for other sources such as inspections and task observations.

RISK ASSESSMENT
Past experience is a key part of identifying hazards and evaluating risks thus analysis of unwanted event reports should always form part of the risk assessment process. Hazards can be identified by the presence in a report of one not anticipated at the time of the initial assessment, such as noise from a nearby unit. Items cropping up repeatedly can indicate a

greater incidence of risk than anticipated, a change in circumstances, people taking short cuts because procedures are inadequate or lack of understanding by those carrying out the task. All indicate a need for a re-assessment and give additional data to make that exercise more effective.

REQUIREMENTS OF A REPORTING AND MEASURING SYSTEM

The objective of any reporting or measuring system must be to gather data from unwanted events and subsequently manipulate that data to make a contribution to the performance improvement programme. This requires careful design and any system needs to be:

- A live system – out of date information not only reduces effectiveness, it reduces credibility
- Simple to use – those entering data and using it will be busy people with a whole range of other tasks to perform.
- Readily understood by everyone using it – people will not grapple with the incomprehensible!
- Transparent – inputs and outputs clear and available to all – no opportunity for being influenced by those concerned.
- Seen to be of value to everyone using it – if there is something in it for me and those with whom I work, I will use it!

EXAMPLE OF AN EFFECTIVE, FLEXIBLE SYSTEM

A number of high quality reporting and evaluation systems are in use, either being designed in-house or bought as commercial products. Each has its own particular strengths. The one with which we are closely associated is "AIRSWEB" and we will now demonstrate some of its features.

DESCRIPTION

The key features of this system are:

It is web-based - there is minimal need for hardware at the point of making the report – just a web browser to the intranet or internet.

All the screens have a banner at the top giving everyone with access to the system a summary of the Company's current position – constantly updated.

All the input screens have the same basic format – see Fig 1.

The data can be manipulated to give trend information, graphs etc., for routine reports – see Fig 2

Defined actions from the accident investigation are automatically built in to an "Action Tracking" module, which will also incorporate actions arising from other sources such as audits. – see Fig 3

A cost tracking facility is included which allows not just an estimation of the cost of an unwanted event but one of the savings which have resulted from a loss control related investment

The ability to report monthly on LTA's etc., is incorporated, as is a severity rating matrix, which can be used to give objective priority setting procedures.

There is the capability of attaching electronic files with support data, e.g. photographs, witness statements, etc.

REFERENCES
1. Bird, F.E., and Germain, G.L., 1986, Practical Loss Control Leadership, International Loss Control Institute.
2. Kibblewhite, J.,1998, Using personal Computers to Manage Safety, Industrial Relations Services
3. H.S.E., 1997, Successful Health and Safety Management (HSG 65) HSE Books

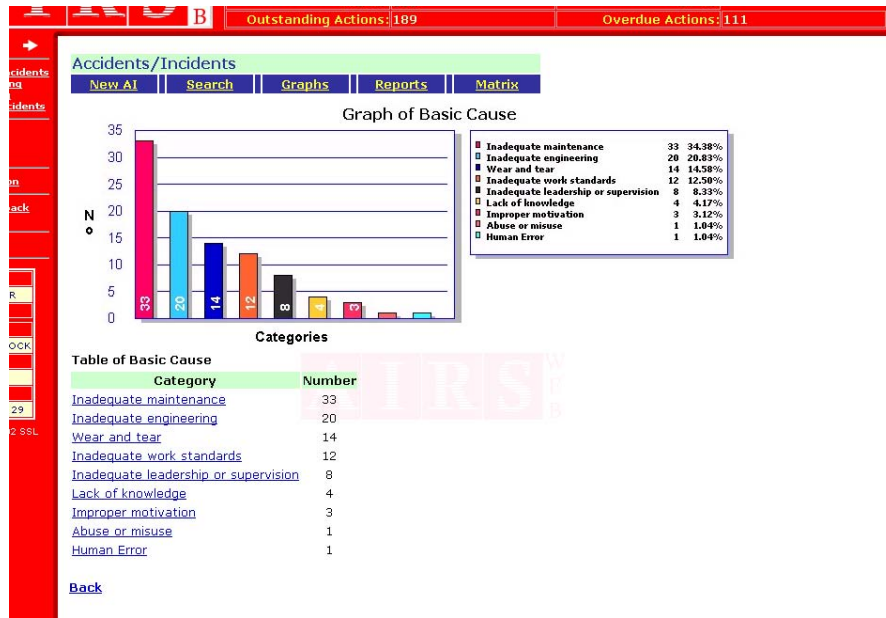**SAMPLES OF SCREENS**

Figure 1.   Unwanted event input screen

Figure 2.   Basic cause analysis graph

Figure 3.   Typical action tracking screen