ZERO HARM

Over the last decade **Zero Harm** and its many variants – including zero incidents, zero injuries, injury free, incident free, always safe – has been a commonly adopted and expressed safety value. Zero harm. Zero risk. Does it matter what we call it?

We just want everyone to be safe – right! No one gets hurt! This is a case of " … Words can hurt you …". If you are shouting "Zero Harm" in every nook and cranny but the workers are hearing "Zero Risk" when they know that a job they do today **does** have risks – and tomorrow they will be out doing a job with different risks – well, they may not believe you. **The growth of your positive safety culture could be stalled**.

Any positive safety culture must be based on a universal and genuinely held belief in Zero Harm as the fundamental, uncompromising, never-ending safety objective of an organisation. Of all the safety beliefs and values, it is the most important foundational principle. The measure of safety climate in an organisation has been *"what we say"* and *"what we do around here"* - but frequently, they could not be more different. *Saying* Zero Harm is an achievable objective and actually *believing* it, is not one and the same.

Soteris assists clients in resolving this conflict and uncertainty by clarifying the confusion and misunderstanding of what the *Zero Harm* belief and objective actually means.

Define what you mean by 'Harm' and 'Harmful Incident'

Organisations have different definitions of "*Harm*" and a "*Harmful Incident"*. Harm could be any business disruption, of any severity. *A* "*Harmful Incident"* could then include any incident or effect involving adverse impact on safety, health, environment, quality, profit, productivity, asset integrity, etc., with a diverse range of consequences. The impact on safety and health could range from very small (e.g., a first aid injury or a slight health issue, etc.) up to very severe (e.g., single or multiple fatalities). For whichever definition of incident severity an organisation chooses, we *can* on most occasions work through a task – or one or more workdays – without a harmful incident, but never with Zero Risk. There is, and always will be, some level of risk.

Inspiration and Aspiration

In all aspects of life we need to aspire to desired goals and objectives, and we also need to be inspired by others – particularly our leaders. To aspire to a desired goal is an **internal** want, wish and hope. To be inspired is to be **externally** stimulated, encouraged and enthused. On both personal and group levels, *Zero Harm* can only be achieved with both inspiration from without and aspiration from within. By resolving common misunderstandings, inspiration and aspiration for safety improvement work in tandem and become based on genuine belief or value – not uncertainty, confusion and doubt.

What is the Difference Between Zero Harm and Zero Risk?

We know that we can work an hour, a day, a year without a harmful incident but we cannot do so without a risk always being present – however small. Everyone recognises the complexity and uncertainty involved in how and why incidents are caused. We appreciate that many incident risk factors and their inter-relationships are not always easy to predict and therefore not always fully controllable.

We have observed the difficulties created when there is confusion between Zero Harm and Zero Risk. Soteris assists clients in resolving this confusion.

Let's be very clear. Zero Harm IS achievable! Zero Risk is NEVER achievable! There is always a probability (and it should be a small probability) that a harmful incident could occur. A positive safety culture keeps that probability very small - as low as reasonably practicable - but it can never be zero.

Realistically, the probability or likelihood of a harmful combination of causal events and circumstances occurring is the real issue – not the possibility of whether or not they can occur. By using all the appropriate safety measures and risk controls, every worker in an organisation with a positive safety culture can do a full day's work and experience zero harm. Tomorrow, they can go out and do the same tasks (or different tasks) and also experience zero harm. In the tomorrows to come they can continually experience zero harm and for every one of those days there will always be that small level of risk – the small probability that something unanticipated and unexpected could happen.

Workers sensibly know that, despite achieving zero harm last time, a *level of risk* is always present the next time. In a positive safety culture, we can confidently expect that everything reasonable and practicable is being done to make us safe – that is, to reduce the risk of a harmful incident this time and the next.

Ceaseless Striving for Zero Harm

Unless we are careful in our safety messages, we can create the mistaken expectation that we can embark on a safety *"journey"* that leads to a safety "*destination"* of Zero Harm *forever*. The implication is that we can reach a utopian destination where we will have *all* the risk factors of *all* incidents well known and under full control for all time. In other words, our prime safety value is based on the unfounded belief that we can reach a destination of no more incidents FOREVER!

Expectations for maintaining a Zero Harm achievement over time need to be clarified and resolved on an ongoing basis for a sustainable belief in Zero Harm – Today and Tomorrow. We know we can celebrate the Zero Harm achievement ONLY 1 job, day, week or year at a time – not forever. To believe and say otherwise is a dangerous example of false confidence.

A sound reminder is to consider this statement – the day we believe we have all risks of all incidents eliminated is the day we have crossed the line between being a good ever-vigilant safety performer and a dangerously arrogant safety manager. Some commentators go so far to say that when we falsely believe that we have Zero Risk is the day we will actually start harming our people or our assets.

Let's be clear – we can and should take every opportunity to celebrate maintaining Zero Harm. It does not matter whether it was for a 10 minute task, or a days' work by an individual, a month's activities by a whole team or a year's achievement by the whole organisation … every achievement is a cause

for celebration and comes with the certain knowledge that we *must* do it again ... and the clear belief that we *can* do it again.

MEASURE AND CELEBRATE YOUR ZERO HARM ACHIEVEMENTS

The objective of *Zero Harm* must routinely be measured and reported, so data on the defined harmful incidents need to be collected and analysed in the initial transition period as the safety culture develops. Initially they are a valuable demonstration that the *performance plateau* that plagues many workers, safety managers, executives and directors has been beaten.

All harmful incidents create losses. The losses may be death or permanent incapacity affecting individuals, and their family and friends. Organisational losses may be reputation or asset damage, environmental impact, income forgone, production losses, and so on. Thus, harmful incident data can be used as markers of these losses. Harmful incident data which are safety related can be used to benchmark against other organisations still trying to use that form of indicator. If we are to use incident data we must, at all times, take care that we are using reliable statistics (see below).

The types of quantitative measures of safety performance commonly used by an organisation can provide information about an organisation's safety culture and climate For example, how many lag indicators and lead indicators an organisation uses, and what these indicators are, tells us something about the safety culture and climate.

Typically lag indicators provide information about what has happened in the past (e.g., number of injuries within a certain timeframe) and lead indicators provide information which helps to predict how effective an organisation's safety program is and how it could be improved (e.g., number of times a supervisor identifies and positively rewards agreed behaviour on the job within a certain timeframe).

At Soteris, we assist our clients to design, implement and monitor measures of Zero Harm, Positive Safety Culture and Safety Climate. We are particularly interested in highlighting and recognising what is working well.

Meaningful measures of how safely an organisation is conducting its business activities must include positive, leading indicators. These are always the indicators of activities organisations are striving to get people to engage in. Examples include, the number of risk assessments being performed, the number of safety conversations involving managers out in the field, the number of people praised for implementing an agreed procedure, and so forth. As the safety culture program becomes embedded into the organisation, these positive leading measures necessarily become more useful than the lagging negative indicators. A benefit of using leading indicators is that they enable you to collect abundant and rich data – not five incidents of harm but 500 instances of great things happening.

The number of measures reported or collected can become large enough to apply the rigour of statistical process control charts. These allow for richer and easier analysis and allow real trends to be identified. These data can be better used by the executive team to make informed decisions and provide predictive indicators of safety performance.

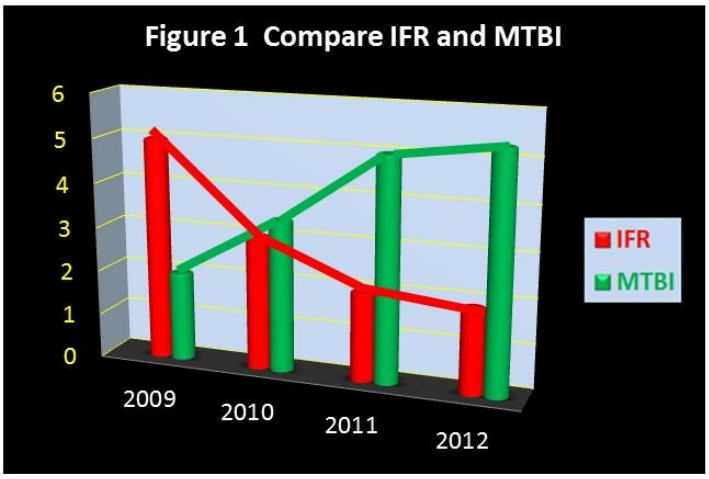
It is important to note that because of problems with sample sizes, many current performance measures based solely on injury statistics currently lack valid and reliable interpretation. Often the sample size (i.e., population, number of workers in the sample workgroup and/or the length of the sample time period) is inadequate to draw any significant and reliable inferences regarding any changes. For example, trying to draw meaning from changes in injury rates for a workgroup of say 100 workers on a month-by-month basis is statistically meaningless. Any fluctuations would almost

certainly be random and not able to be reliably associated with any safety program being implemented.

If we take care in using only reliable statistics, it is possible to use the incident rate data as part of the embedding of a positive safety culture. Soteris encourages organisations to continue to measure and celebrate how long they can operate without having any of the defined harmful incidents.

It is also possible to put a positive face on the lagging measures. Rather than the traditional rate of the mean number of harmful incidents for 1 million work-hours, there is a valuable alternative. It is the inverse of the rate. For example, instead of quoting a mean rate of five incidents per 1,000,000 hours, it is much more positive to say that the mean time between harmful incidents is 200,000 hours (i.e***., on average, we have achieved our safety objective of Zero Harm for 200,000 hours!***). This parallels the common engineering measure of Mean Time Between Failures (MTBF), the meaningful measure of reliability of systems and assets. The inverse of the rate becomes the Mean Time Between Incidents (MTBI) or ***safety reliability,*** which can be quoted as, "We work an average of 200,000 hours with Zero Harm".

One distinct advantage is that MTBI goes up as you become a better safety performer. For example, if Incident rate went down from 5 per million to 2.5 per million, this achievement can be better expressed as MTBI going up from 200,000 hours to 400,000 hours (Figure 1). A Safety Reliability Graph of performance would NOT show the common trend – going down to a plateau or asymptote. With MTBI, going up is good!

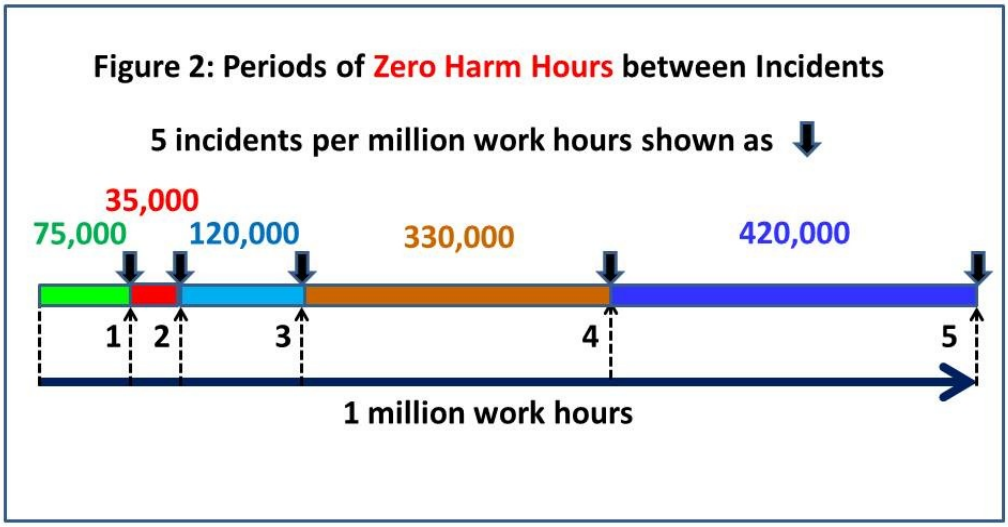


IFR = Incident or injury Frequency Rate
= Mean Number of incidents per time period
[say 1,000,000 hours worked]

MTBI = Mean Time Between Incidents or injuries
= Inverse of IFR = 1/IFR
hence 1 / IFR of 5 per million hours = 200,000 hours worked

Year	IFR	MTBI
2009	5	2
2010	3	3.4
2011	2	5
2012	1.9	5.3

A better graph for a shorter time scale is simply a binary graph (Figure 2).



A similarly positive measure is a very old but still very effective, easily recognised and appreciated method. It is simply the number of days since the last harmful incident. We have seen photos of a safety sign dated 1930 at the gate of a work site, justifiably celebrating that the site achieved its safety objective of Incident Free for 156 days. We are sure you have seen similar signs. Consider it as the celebratory expression that clearly and undeniably, **the site achieved its safety objective for 156** days! Even when they had the harmful incident, they retained their objective of Zero Harm - they still worked for, and continued to have, Zero Harm days.

Soteris can provide assistance in establishing meaningful measures for internal and external monitoring and benchmarking safety performance. Soteris encourages organisations to measure and celebrate Zero Harm achievements. At Soteris, *Zero Harm* becomes *Zero Harm – Today and Tomorrow*. Engaging the whole organisation in the effort and the rewards is always a vital part of growing your positive safety culture.

Soteris provides effective and practical solutions, tools and training to assist everyone in the organisation develop a clear understanding that *Zero Harm – Today and Tomorrow*, is an achievable inspirational objective, and not just an aspirational hope.