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Benefit-Risk Assessment for Sport and Recreational Activities

The words “Risk Assessment”, and “Hazard Identification” are bandied about by manufacturers, designers, and owners to justify a sale or purchase when products, projects, or services do not meet the minimum requirements of published standards or the standards to not provide sufficient injury prevention. These RA or HIRAs have become sales tools, with many being a detriment to themselves, their customers and end users. Ultimately when and injury occurs that the injured party decides is not acceptable, the dubious document will come out and be judged.

Risk is the combination of the probability of harm and the severity of that harm. Very simple? Well no. This is a complex situation since the harm can be to persons, the environment, an organization, etc. The harm can come from a number of causes. In some cases, they are known, while in others they should be known or are unknown to the risk assessor, but known to other experts in the field, making the analysis complex. Generally, being harmed will involve the demand for a financial compensation to reverse the damage or harm. The severity of the harm will likely determine the magnitude of the cost.

In industrial occupational health and safety (OH&S), the work of the risk assessment is somewhat simplified by having the goal of zero harm or injury. The work of the risk assessor is to investigate all causes of any injury and work to reduce the likelihood of those causes happening, ideally bringing the risk to zero or a low likelihood. There are situations where physical risk mitigation does not bring the risk to tolerable, particularly when the reasonably foreseeable use of people is factored into the causes of harm. This is where the product or project might be abandoned or modified. The alternative that many people and organizations reach is modifying behavior through the inclusion of warnings, training, and personal protective equipment (PPE). Should an injury occur, there could be an investigation by the courts or regulators where a good risk assessment can form part of the defense, while a poorly done risk assessment is likely to hurt the defendants.

Sport and Recreation, almost by definition, includes the participation of human beings of all ages, skill levels, physical and mental abilities, different languages, etc. Add to this that sport and recreation has a fundamental tenant of graduated challenge with the intent that each and every participant is likely to stretch the boundaries of the activity. In organized sports there are rules, limiting behavior, while recreational activities only have modification of behavior through on-site supervision, physical barriers or obvious injury or self-preservation. The rest is an open field. Some rely on waivers to limit liability.

An expectation in sport, recreation and play is that someone, somewhere, sometime will be injured participating in sport, recreation, and play. This is a significant diversion from the OH&S field where no one comes to work anticipating an injury. This non-zero severity in sport, recreation and play presents the product, facility, or service



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designer and provider with a new problem. If they are not to prevent all injuries, what severity of injury is acceptable to society, the participating user, the injured user, and the courts. What are they prepared to defend. Some standards include injury statements such as prevention of “life-threatening and debilitating”, “serious and life-threatening injuries”, or “bumps, bruises and even the occasional broken limb”, while others require specific performance that have injury severity traceable to automotive data. In most lawsuits the injury severity is less than those stated in standards. Settlements are reached and awards made for significantly lower severity than life-threatening and debilitating.

Difficult or not, the risk assessor in the sport, recreation and play sector must work within their organization and determine what severity of injury is tolerable. Once this severity is set and likely known for the activity, the risk assessor can begin with their team to determine the probability and risk of the activity. If the probability of the stipulated injury severity is of a probability greater than what is tolerable, the risk is not tolerable.

In the OH&S sector, not meeting the tolerable risk, is likely to put the product, facility, or service in jeopardy. In sport, recreation, and play, by using ISO 4980 for the performance of a Benefit Analysis has the potential to result in acceptance. ISO 4980 provides for the performance of two distinct and independent processes, the Benefit Analysis and the Risk Assessment. This is followed by an evaluation of each leg for a determination of balance. Where the risk is not tolerable in and of itself, however the benefits to society, individuals, etc. are significant, the benefit can over balance the risk and the project, product, or service moves forward. Every project is subject to periodic review, which might change the risk, the benefits or the balance, causing changes to be made.

The Benefits of sport, recreation and play are obvious to almost everyone that breaths air. The problem for most Teams performing the Benefit analysis is articulating them. Better cardiovascular health, being outdoors, gathering with friends and family, etc. are easy. Etc. is the problem. Do you look at a reduction of youth suicide rates when there are good recreation and sport programs? How much emphasis is put on the fact that the participant is having “fun”. How do you measure “fun” on a scale? Same goes for the activity in childhood being a path to better citizenship as an adult. It is important that the Team develop a good methodology and using that methodology articulate in detail what the benefits are to be carrier through to the evaluation of the balance between the Benefits and Risks. These Benefits moving the project forward could well be challenge in court, making a well document Benefit Analysis and the Evaluation critical.

ISO 4980 defines the structure of a Benefit-Risk Assessment, with descriptions of types of risk for products, facilities and services within sport, recreation, and play along with a methodology for the performance of the Benefit Analysis, the Risk Assessment and the required Evaluation.

ISO 4980 allows innovation in the design and delivery of products, facilities, and services not only in the obvious Sport, Recreation and Play, but any activity that involves the limited or full participation of persons where control over their behavior is not likely. This would include activities such as mountain biking, rope courses, bouldering, skiing, playgrounds, challenge courses, etc. By applying the methodology in ISO 4980 the assessment team should be able to determine the viability of any product, facility, or service.



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The ISO 4980 provides an entire section (9) for training and competency. If you are considering performing your own Benefit-Risk Assessment, you might want to review the expectation for competencies and then seek out some of the training that is available. You will also need to assemble a team familiar with as many aspects of your product, facility, or service to cover the complexities of the assessment, determination of injury severity and anticipated reasonably foreseeable use, among other considerations that will be unique to your project.

The Public Review or Final Draft International Standard (FDIS) document is available for viewing and commenting. This is not the published standard and users should purchase the final standard from ISO to ensure they are current.

The ISO 4980 provides opportunities for many projects that incorporate risk and innovation. Users are encouraged to take advantage of the document in its entirety to the benefit of users of Sport, Recreation, and Play products, facilities, and services.