

## Improve your Competitive Advantage

### How people get hurt!

Let us think about how people get hurt. Typically, people hurt themselves when they:

- ❖ Misuse a product,
- ❖ A product is poorly designed for the population it is intended to be marketed to,
- ❖ People purposefully or unconsciously do not heed instructions warnings or directions,
- ❖ Manufacturers take short cuts and in either design or manufacture of their products, or
- ❖ People do not do what they are supposed to do in the context of making sure places where people work, travel and live are safe.

I bet most of you are thinking – so what is the new news here? The news is that when people get hurt there are underlying reasons. Reasons that if corrected will prevent future injuries. A poorly designed or maintained stairway will most probably cause an injury, and if an elderly person, particularly elderly women, the chances are quite high that a serious injury will occur. We can demonstrate that the dynamics associated with ascending or descending a poorly configured stairway can cause serious falls. We can, and have proven that a poorly designed and manufactured table guard resulted in a person loosing their fingers.

There is another side to the argument, the user's responsibility to ensure their own safety. There are cases when products are misused; we all know that. I characterize this phenomenon as risk appetite. This is when two guys pick up a lawn mower, hold it on either side while it is running and attempt to trim a hedge. Let us think about this one. One of them gets hurt – and I am sure you can imagine that this is not a minor injury. Who has responsibility, and what might have prevented this misuse?

When we talk about human factors and safety, we focus on human performance and behaviors. The discipline of human factors is a marriage of the principles utilized in engineering and psychology that acknowledge the premise that "things" do not exist in a vacuum they are invented by, used by, and oft times *surrounded* by people. With that in mind, there rules, laws, standards that govern a human's safe interaction in the world. This is what a Human Factors expert can bring to your team.

Throughout our experience we find that most issues fall into one of these five, broad categories:

1. Instructions and procedures
2. Warnings
3. Task Performance
4. Anthropometrics/Ergonomics
5. Behavioral

### Personal Injury/Product Liability Experts

A.C. Macris Consultants, of Mystic, Connecticut, specializes in applying the discipline of human factors engineering in both plaintiff and defendant personal injury/product liability litigation as an expert witness. We are one of the few firms devoted to this specialty. Mr. Macris and his colleagues have access to extensive databases of technical information and maintain relationships with organizations such as the University of Connecticut's Human Factors Graduate Program.

As human factors/ergonomics experts, we work on a wide range of personal injury cases including machine guarding, slip/trip and falls, warnings, product design analysis, human error analysis, and accident investigation. Our practice supports cases associated with consumer and industrial products as diverse as paper roller machines, recreational boat railings, geriatric falls, and table saws.

#### Did you know?

For a warning to be effective the user must:

- Notice the warning (color, design, etc)
- Perceive the warning (low voltage v. high voltage)
- Understand the warning (convey the right message)

The common thread in our work is the ability to apply the proper analytical techniques, along with an understanding of the parameters of human interactions within various environments. We design successful, creative approaches utilizing the principles and discipline of human factors/ergonomics in support of our client's cases.

### A Tradition of Quality Service

A.C. Macris founded his consulting practice in 1985 with a 10 - year background in human factors and industrial engineering. Because of this background, Mr. Macris was sought out to support a few high - profile personal injury cases, one involving the death of children associated with faulty and incorrectly installed smoke detectors. As the benefits of engaging a human factors expert became apparent, his practice grew.

### Testimonial

Excerpted from Attorney William Gallagher, New Haven, CT -  
“..your efforts on the plaintiff's behalf, particularly the detailed workup in assessing the product defect from a human factors engineering standpoint was indispensable to the plaintiff's case and directly led to a favorable settlement for him...I should add that a couple of attorneys in my office initially thought that we had no chance of success in this case because the plaintiff had taken the guard off the 10" table saw. The analysis from a human factors standpoint of the defective design of the guard and splitter obviously convinced the defendants that they had substantial exposure in the case.”

See back for a description of two cases indicating human factors consideration.

## Experience

The sample listing of our engagements illustrates the range of personal injury/product liability litigation we have supported. The cases are listed by title only. Additional information about any of these cases is available upon request.

### EXAMPLES OF OUR ENGAGEMENTS

- √ Table saw guarding
- √ Boat safety rails
- √ Newspaper conveyor roller
- √ Smoke detector installation
- √ Wood stove fire
- √ Auto ramp accident
- √ Broken auto axle
- √ Dumpster fire
- √ Spontaneous combustion - warning
- √ Truck wheel assembly accident
- √ Hand-held vacuum
- √ Oil drum explosion
- √ Hammock accident
- √ Child gate accident
- √ Trip and fall
- √ Swimming pool accident
- √ Traffic accident
- √ Paper roller accident
- √ Chemical exposure
- √ Lawn mower blade accident
- √ Geriatric slip & fall

## Business Philosophy

As part of our commitment to providing the highest quality service, we also understand that responsible cost management of expert services is of ultimate concern to the client. It is our practice to discuss each case with the law firm or attorney engaging our service and agree upon a scope, as much as possible, with the information available. Because of our experience we are able, in most cases, to quote a fixed price for the agreed upon scope. This typically includes a preliminary investigation followed by a report.

This approach proves to be highly desirable to our clients. Additional involvement, such as depositions and/or court appearances, is billed on a time basis with an agreed-upon rate structure

**A. C. Macris Consultants** brings together today's technology in human factors with established disciplines of

- Product design
- User interface
- Warnings & labeling
- Geriatric factors
- ADA issues
- Facilities
- Environmental factors
- Safety Performance
- Guarding & guard railing

## Brief Description of Selected Cases

### Warning example

*Swimming pool accident.* The case here concerned a shallow (4 feet deep) above-ground pool, located on a sloping lawn such that on the high end of the lawn a deck had been built up to the pool's edge. The deck afforded the opportunity for bathers to run and jump into the pool. The accident involved a woman who had considerable experience with swimming and above-ground pools. Throughout the afternoon, she had been jumping into the pool by "flipping" or somersaulting into the water. As long as she completed the somersault, her feet made contact with the bottom of the pool. Her last flip however, was not a complete somersault and her head was the first thing to make contact with the bottom of the pool. This resulted in a spinal injury and paralysis from the neck down.

So who is to blame? Who is liable? The pool did not have "No Diving" signs, or other informational warnings concerning the depth or dangers associated with diving into shallow water. But, considering her familiarity with the pool and proficiency in the water, would the woman have heeded a "No Diving" warning? Furthermore, she was not diving and a "No Diving" warning would not indicate that spinal injury could result.

### Anthropometric/Ergonomic example

*Boating accident.* A young man accidentally fell off the front of a moving pleasure boat, was subsequently drawn under the boat into the propeller, and killed. This boat had a large forward area, conducive to sun-bathing and a place for riders to enjoy the view and boating experience. Therefore, there was every reason to expect that passengers would want to be there. The young man involved in the accident was lying down, face up, enjoying the ride when the boat encountered a large wake from another vessel. The resulting action caused the man to slide off the deck, and into the water. The boat had a safety hand rail for standing passengers but no lower rail or hand grips on the deck. The distance between the deck and the safety rail was in excess of all but the largest of males in a sun-bathing position. All of these issues are foreseeable. Research and standards exist regarding safety lines and their relationship to anthropometric measurements.

Other complicating issues arose during this case, such as propeller guarding, and other warnings. Again, the human factors expert was able to determine the real issues, utilizing existing research and standards to develop a case for the family of the deceased.



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