

THE SYMBOL DESIGN DEBATE: ABSTRACT VERSUS REPRESENTATIONAL



By Geoffrey Peckham

Last year's "On Your Mark" columns discussed how specific symbols have changed over time to become more standardized. This year, we'll look closer at this important aspect of visual safety communication and effective label design – symbols – by exploring a new current trend or topic in each column. Our focus this month: abstract versus representational designs.

All graphical symbols are abstract to a degree, meaning we're meant to glean a real-life message from what they depict. When it comes to safety symbols, in my view, the more representational they are, the better. The reasoning that leads me to this conclusion is important to your company's risk reduction efforts, and it's at the heart of a current debate going on in the ISO standards committee that registers safety symbols.

THE CASE FOR REPRESENTATIONAL SYMBOLS

The three reasons I believe symbols designed in a representational, versus abstract, manner are more effective are as follows:

- **Time in an emergency:** In a safety emergency, there isn't time for hesitation trying to figure out what a symbol means. For example, in a factory situation, when a person's eyes come in contact with a corrosive chemical, they must immediately find the eyewash station. When a fire or earthquake occurs, people must be able to easily locate the building's emergency exits. Imagine yourself in these emergency scenarios; if the safety sign for the eyewash station or emergency exits use symbols that are difficult to decipher, you'll lose important time trying to understand

the sign, time that could mean the difference between escaping tragedy or being seriously injured.

- **Clarity to avoid accidents:** Abstract symbols can be difficult to comprehend, risking confusion and misunderstanding, both of which can lead to accidents. For instance, when maintenance needs to be performed on a machine, the symbols used on the machine's safety labels need to clearly remind workers of their need to take specific safety precautions to avoid interaction with potential hazards, such as electrocution or entanglement.
- **Better behavior modification:** Symbols that show human interaction with a hazard give viewers more appreciation for the need to take precautions to avoid it. Such symbols let us *see* the consequences of not obeying a safety message. Look at the two symbols in Figures 1 and 2. Figure 1 is the registered ISO 7010 safety symbol



Figure 1: Registered ISO 7010 safety symbol for "counter rotating rollers"



Figure 2: Safety symbol for human hand entrapped in rollers

for “counter rotating rollers.” Compare it to Figure 2, the safety symbol that includes a human hand entrapped in rollers. This latter symbol provides the viewer with a *personal* context which, in my opinion, not only makes the potential hazard more understandable, but, psychologically, elicits a higher degree of motivation in the viewer to avoid the hazard.

THE CURRENT DEBATE WITHIN ISO

The member countries on the ISO standards committee in charge of registering safety symbols, ISO/TC 145 subcommittee 2, are currently debating the preference for general, more abstract safety symbols versus accepting a wide array of symbols that are more specific and particular in the way they depict a hazardous situation. The safety symbols in Figure 3 can be used to illustrate this debate. Each of these symbols shows a person entrapped in rollers. Do we need ISO to standardize all of these symbols? Or should the symbol shown in Figure 1 work for all of them?

The problem, here, has to do with the rules setup by ISO/TC 145 for symbol registration which say that only one symbol can be standardized for a given meaning. The meaning, in this case, is the same: “danger – counter rotating rollers.” Yes, a slightly different set of words could be used to describe the more specific roller entanglement symbols, such as “danger – crushing of hands in between conveyor rollers.” But this logic could lead to a series of symbols that are nearly identical with only differences in the direction and size of the rollers and the part of the human body that is entangled. So the question

before this ISO committee is, does ISO need to standardize safety symbols that are designed to convey specific ways in which people could interact with hazards?

MOVING FORWARD WITH SYMBOL DESIGN

As an engineer whose task is to design a safe product, this question facing ISO standardization is important to the symbols you choose to use on your products’ safety labels. In this author’s view, to a degree, the more specific to the situation the symbol can be, the better chance the intended communication will occur. I qualify this statement with the words “to a degree” because even symbols that are representational in the way they depict specific context need to be drawn *simply* so their intended message can be efficiently communicated. A real balance needs to be found when creating new safety symbols; just enough visual information should be given to convey the intended meaning while unnecessary details – ones that could obscure the message – should be eliminated. This is important because the goal of safety symbols, whether they appear on your product safety labels or on your facility’s safety signs, is to effectively communicate their messages so people are better protected from harm.


Stay tuned for the next article in this year’s *On Your Mark* series which will focus on the growing trend in product safety labeling to use symbols to both describe the potential hazard description and explain how to avoid it. 



Figure 3: Examples of symbols showing entrapment in rollers with slight variations

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