I – ROBOT

by

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Some folks like science fiction, others don't. I belong to the first group. I began reading science fiction as a teenager and have continued through most of my adult life. The interesting part about having that type of background is that you often have the opportunity to see scientific facts replace science fiction.

Many science fiction novels written at the turn of the century postulated that we would someday go to the moon. We have been there and done that. Others have talked about things that were unbelievable fifty years ago that are common place today. Just look at the computing power of your cell phone and your IPad.

One of my favorites was a book written Isaac Asimov entitled "I-Robot". There was a set of rules that robots were required to obey that Asimov proposed to assure that robot would never turn on the human race. The three rules are :

1. A robot may not injure a human being or, through inaction, allow a human being to come to harm.
2. A robot must obey the orders given to it by human beings, except where such orders would conflict with the First Law.
3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.

Of course Asimov did not have the special effects generator to produce the visions of such terrifying robots as the Terminator and the Transformers.

However, don't be surprised if you see a robot sometime in your future. For example, we currently have robotic vacuum cleaners, robotic welding machines and robotic surgery equipment.

One of the problems of robotics is that of mobility and stability. This is especially true in

trying to traverse uneven and unfamiliar ground.

But things are about to change. In the latest issue of Technology Review Magazine, there is an article on robots being created by the Massachusetts Institute of Technology that could conceivably alter all of that. Meet Atlas!

The MIT robot, named Atlas, demonstrates an exceptional sense of balance and stability that will allow it to move around human environments very effectively. Interestingly, the very first use that they are proposing for this robot is its use in emergency rescue operations. Does that sound a little like the world we live in?

Don't worry; it isn't going to be here next week. There are limitations to Atlas. It is expensive and it is noisy. Nonetheless, it is being programmed to deal with such things as entering control rooms at nuclear power plants or controlling valves in hazardous materials scenarios. The designers will readily admit that "if your goals are to make something that is equivalent to a person, we have a way to go". That quote is from Mark Raibert, co-founder of Boston Dynamics who is continuing to pioneer the development of robots with "dynamic balance". What that literally means is being able to maintain continual motion and remain upright.

In the MIT Technology Review, there is another technology that is paralleling robotics that is already being used in the fire service but its potential has yet to be achieved. I am referring to drones. If you are paying attention to the news today, you probably already heard drones are being used in wildland fires. The article in MIT talks about them being used in agricultural settings.

The concept of a drone is so simple that I am surprised that it took us this long to figure out. It is merely a low cost aerial camera platform utilizing either miniature fixed wing airplanes or helicopters. These miniature aircraft are equipped with autopilot using GPS and containing a standard point and shoot camera.

This is not the same as a radio controlled airplane that you might have seen flying over a park somewhere. It is a very sophisticated yet economically achievable device that

allows an omnipotent view of the ground. In the agricultural setting, these devices are already being used to assess the status of crops, the effect of water, and the health of plants. And, it can do so in a matter of moments.

The article suggests that the use of drones by agriculture is part of being a more data driven process. The farms of today are extremely sophisticated and technology is all part of their tool kit. It is likely that it will be part of the fire services took kit in a more meaningful way in the future.

Over the years I have written numerous articles projecting that certain things would happen in the fire service. A significant number of them have come to pass. However, it was not because of my predicting something that didn't exist, it was because I was projecting something that already existed. Could we have visualized the proliferation of video cameras in the business place 20 years ago? Yet, 20 years ago, video surveillance was there. It was simply not readily available and too expensive.

As a result, I would submit that robotics is going to have a place in the fire service in the very near future. Those robots may cost a million dollars each now, but when they get down to a more reasonable level, someone is likely to form a conclusion that buying a robot that never has to retire is an economic advantage.

I once communicated with Isaac Asimov about the question of what would happen if there was a fire in a zero gravity environment. I still have his postcard where he said "let me think about it". Today, you can go see the movie Gravity and see what science fiction writers think is likely going to happen if there ever was a fire out there.

Going back to our opening paragraph again, there are people who think science fiction is hokey. I suppose there were people who felt that way about steamers, automotive apparatus, 800 mhz. radios, and other technologies that have been adopted by society and integrated into the fire service. It pays to pay attention to technology when it is in its infancy.