

"The vendor shall provide forty (40) hours of operator training. This training shall cover all aspects of robot operation including exhaustive coverage of the safety procedures which must be followed in the case of exceptional conditions which potentially contain the risk of bodily injury.

"The vendor shall provide and administer appropriate test instruments which shall be used to certify sufficient operator understanding of robot console operations and safety procedures. Only employees of customer who have passed this test shall be allowed to operate the Robbie CX30 robot in an actual industrial setting.

"The reference manual shall provide clear instructions for operator intervention in all exceptional situations, especially and including those which potentially contain the risk of bodily injury."

According to Witherspoon, sworn affidavits from several robot operators at Cybernetics, Inc., state that only one work day (approximately eight hours) was spent in operator training. Furthermore, almost no time was spent discussing potentially dangerous exceptional conditions.

"The written test developed by Silicon Techtronics to certify a robot operator was considered a 'joke' by Cybernetics employees", Witherspoon asserted. "Silicon Techtronics obviously did not give much thought to the training and testing procedures mandated by the requirements document according to the evidence in our possession".

SOFTWARE ENGINEER CHALLENGES AUTHENTICITY OF 'KILLER ROBOT' SOFTWARE TESTS

SVU PROFESSOR'S INQUIRY RAISES SERIOUS LEGAL AND ETHICAL ISSUES

Special to the SILICON VALLEY SENTINEL-OBSERVER Silicon Valley, USA

by Mabel Muckraker

The "killer robot" case took a significant turn yesterday when a Silicon Valley University professor issued a report questioning the authenticity of software tests that were purportedly performed on the "killer robot" software by Silicon Techtronics. Professor Wesley Silber, Professor of Software Engineering, told a packed news conference held at the university that the test results reflected in Silicon Techtronics internal documents were not consistent with test results obtained when he and his associates tested the actual robot software.

Silicon Valley is still reacting to Professor Silber's announcement, which could play an important role in the trial of Randy Samuels, the Silicon Techtronics programmer who has been charged with manslaughter in the now infamous "killer robot" incident.

Pressed for her reaction to Professor Silber's report, Prosecuting Attorney Jane McMurdock reiterated her confidence that a jury will find Randy Samuel's guilty. McMurdock shocked reporters, however, when she added, "But, this does raise the possibility of new indictments".

Ruth Witherspoon, spokesperson for the "Justice for Randy Samuels Committee", was almost exultant when she spoke to this reporter. "McMurdock cannot have it both ways. Either the programmer is responsible for this tragedy or management must be held responsible. We believe that the Silber report exonerates our friend and colleague, Randy Samuels."

Silicon Techtronics CEO Michael Waterson issued a terse statement concerning the Silber report:

"Soon after the indictment of Randy Samuels was announced, I personally asked the esteemed software engineer, Dr. Wesley Silber, to conduct an impartial inquiry into quality assurance procedures at Silicon Techtronics. As the chief executive of this corporation, I have always insisted on quality first, despite what you might have read in the press.

"I asked Professor Silber to conduct an impartial inquiry into all aspects of quality assurance at Silicon Techtronics. I promised Professor Silber that he would have access to all information relevant to this unfortunate situation. I told him in a face to face meeting in my office that he should pursue his investigation wherever it might lead, regardless of the implications.

"It never occurred to me, based upon the information that I was getting from my managers, that there might be a problem in which software quality assurance procedures were either lax or deliberately circumvented. I want the public to be reassured that the person or persons who were responsible for the failure of software quality assurance within the Robotics Division of Silicon Techtronics will be asked to find employment elsewhere."

Roberta Matthews, widow of Bart Matthews, the robot operator who was killed in the incident, spoke to the Sentinel-Observer by telephone from her home. "I still want to see Mr. Samuels punished for what he did to my husband. I don't understand what all the commotion is about. The man who murdered my husband should have tested his own software!"

The Sentinel-Observer interviewed Professor Silber in his office shortly after his news conference. On his office wall were numerous awards he has received because of his work in the field of software engineering and software quality assurance. We began the interview by asking Professor Silber to explain why it is that software is sometimes unreliable. He answered our question by citing the enormous complexity of software. "Large computer programs are arguably the most complex artifacts ever fashioned by the human mind", Professor Silber explained, seated in front of a large computer monitor. "At any point in time, a computer program is in one of an extremely large number of possible states, and it is a practical impossibility to assure that the program will behave properly in each of those states. We do not have enough time to do that kind of exhaustive testing. Thus, we use testing strategies or heuristics that are very likely to find bugs, if they exist."

Professor Silber has published numerous papers on software engineering. He made headlines last year when he published his list of "Airlines to Avoid as if Your Life Depended Upon It". That list named domestic airlines that he deemed irresponsible because of their purchase of airplanes that are almost completely controlled by computer software.

Soon after Randy Samuels was indicted in the "killer robot" case, the CEO of Silicon Techtronics, Michael Waterson, asked Professor Silber to conduct an impartial review of quality assurance procedures at Silicon Techtronics. Waterson was acting in order to counter the bad publicity generated for his company after the Samuels indictment.

"Quality assurance" refers to those methods a software developer uses to assure that the software is reliable: correct and robust. These methods are applied throughout the development lifecycle of the software product. At each stage,