The threat of nuclear war puts enough stress on people that an accidental nuclear war could be the result. With more and more of the superpowers defences being controlled by complex computers, the chance of a malfunction increases as well. Add this to normal human error and governmental mistakes and you have a recipe for disaster. For this paper I will be describing examples and systems of the United States, as Canada has no nuclear weapons, and the USA's information is more readily available than the other nuclear equipped countries.

"Accidental nuclear war" is a term for a very broad subject, with hard to define boundaries. Technical errors, miscalculations and unintended escalation can all lead to inadvertent nuclear war.

In the 1950's a flock of geese was mistaken for a squadron of Russian bombers, and in 1960 a radar beam reflecting off the moon duplicated a Soviet ICBM (Inter-Continental Ballistic Missile)(Barbara Marsh, p.65). Both of these false alarms were detected in time to halt a counter-strike mainly because it was peace time and no one's finger poised over the "button". During a crisis, peoples high levels of stress create suspicions where there shouldn't be, and as a result many safe guards are removed that are in place to prevent an accidental launch. It is feared that under these circumstances it would be quite easy for a flock of geese to set off a nuclear war. Another fear is that a smaller nation, such as recent Korea, could gain control of, and utilize nuclear weapons, and trigger a war between the super powers. This type is called a catalytic nuclear war.

There are two types of control over the operation of nuclear weapons: positive and negative. Plans implemented in order to prevent unauthorized use of the nuclear weapons - mechanical obstacles, electronic locks, prohibitive operational procedures - are designated as 'negative controls'. An analogy for negative control could be a father keeping his rifle unloaded, with the safety catch on and locked securely in a gun cabinet so there is little chance that the rifle will be fired by accident. Similarly there are numerous safeguards in place in order to prevent the nuclear weapons from being fired accidentally.

Positive control means making sure that the nuclear missiles can be launched quickly when the order to fire has been given. This involves the reduction of negative control, and can be the cause for problems. An analogy for positive control could be a father, knowing that there is an intruder in the house, having his rifle loaded and ready to fire. Under both exceptional pressure and apprehension, the rifle could easily be fired by accident. So when all the safeguards are removed, all it takes is a few moments of error to launch an accidental strike.

From 1977 to 1984 there were approximately eleven-hundred false alarms but only six ever escalated to the point of a Threat Assessment Conference (TAC), in which it is called a serious false alarm. There is the possibility that a false alarm could take longer to confirm than the decision time available, with the end result being the unintentional launch of missiles. There is a model that can show the percent possibility of an unresolved false alarm depending on decision time and duration of the crisis. For example if the decision time is 15 minutes and it takes 2 minutes to resolve, during a crisis that goes on for 30 days, then the percent possibility of accidental launching of ICBM's is about 0.2%. But if decision time drops to only 6 minutes then the probability rises to over 50% (Wallace, Crissey, Sennot. pp.85-170).

Another threat related to accidental nuclear war is escaltiative nuclear war, in which a minor situation becomes an all out nuclear war.

One scenario could be the escalation of a conventional war in Europe, where the deployment of nuclear weapons along the front line would come under the control of field commanders. Under these conditions the "nuclear threshold" could easily be crossed if the field commanders were pressed in any way(Fen Olser Hampson. pp.80-114).

A fully accidental war during a time of peace seems unlikely due to the amount of negative controls in place to prevent accidental nuclear weapons launch. But there are many people who want the USA to adopt a 'launch on warning system' but Barbara Marsh disagrees with this method in her thesis on accidental nuclear war, stating that, by her calculation, an accidental nuclear strike, under the current policy, which requires warnings from both satellites and ground based radar, won't occur for another 20,00 years. But under the 'launch on warning' system she predicts that one will occur within the year. One way to lower the need for a quick counter-strike or pre-emptive strike would be to increase the survivability of the command centers. Allowing the government to ride out the first strike and take as much time as necessary to consider a response, with emphasis on survivability of forces and continuance of strict negative control over all nuclear weapons (Bruce Blair.pp35-68).

The facts show that an accidental nuclear war is very unlikely to occur during normal peace time conditions. The chance does increase substantially during a crisis when positive control, the need to respond quickly to attack, outweighs negative control. The major cause for an accidental nuclear war will in all likelihood not be a malfunctioning computer but a management problem, which will require substantial looking in to and pending efforts in prevention. I believe that the two super-powers have shown that they are responsible and have proven that they really do mean to disarm, but the vacuum left by their nuclear absence is being filled with many new faces, with problems of their own.