EXECUTIVE SUMMARY

Recently public attention has been directed towards the risk of accidental nuclear war. The two superpowers have been discussing ways of reducing the risk of war by miscalculation, and members of the US Congress have put forward bills promoting the establishment of joint crisis management centres. A number of articles in newspapers and magazines have asserted that the risk of war by accident is great and is increasing year by year.

Researchers are trying to analyze and to quantify this danger. What is the magnitude of the risk? Is it growing? What factors contribute to increasing the risk and how can it be reduced? A number of methods have been applied to the study, including modelling of alert/reaction systems, and statistical analyses of past international crises. This conference brought together representatives from different disciplines, using different research tools, so that they might exchange data, develop some form of consensus about the severity of the risk and suggest ways of reducing it. Their discussion covered five subjects: modelling, computer programming, command-and-control systems, crisis behaviour, and the role of human error. The mathematical models presented varied in their underlying assumptions and in the methods used for manipulating key parameters, but there was general agreement on the findings. The modellers present argued that the risk of an accidental nuclear launch due to unresolved false warning was increasing, especially with the deployment of weapons systems very near the borders or coastlines of the opposing power; short delivery time meant very little time to determine whether an alert was false. It was recommended that the nuclear powers agree to withdraw those weapons systems which have driven down decision times.

Short warning times are also related to concerns about the fallibility of computer programs and the vulnerability of command and control systems. Reduced decision times provide an incentive towards the automation of the alert/launch response. The vulnerability of command centres means that the military planners put high priority on getting the missiles out of the silos quickly while the communications channels are still functioning. It was recommended that C^3I systems be made more "survivable" and that planners and policy-makers resist any pressure to move to an automated launch-on-warning posture in times of crisis.

The last two days of the conference examined the effects of human behaviour and human error on the risk of inadvertent nuclear war. Such a war would occur not because either side thought it could gain from launching a nuclear attack but because the crisis had inexorably escalated as a result of misperception and bad judgement, aggravated by a lack of diplomatic skill and military restraint.