

# SDI IN CANADA?

Possibilities for deployment. By John Honderich

## ■ Could Canada find itself bound up in Star Wars? The very thought has sent shivers down the spines of many Canadians.

■ The recent renewal of the NORAD agreement, without the Anti-Ballistic Missile (ABM) disclaimer, has led many strategic experts to suggest that Canada may become an unwitting partner in the Strategic Defense Initiative.

Canada, located in the middle of the nuclear no-man's land, would be a prime choice for deployment of part of the defence system. In the words of John Pike, Associate Director of Space Policy for the Federation of American Scientists: "there is no magic in this conclusion, only the facts of geography."

In a paper submitted to the October 1985 conference on SDI, sponsored by the Canadian Institute for International Peace and Security, Pike argued that "there are several ABM components that might be deployed in Canada, should Canada elect to participate in the deployment program. There are also some ABM components whose technical characteristics are such that their basing in Canada could enhance their contribution to the defense of the United States."

The technological chasms that must be bridged before SDI could become a reality appear almost insurmountable. Already various theories and defence concepts have been discarded as the research has evolved. Furthermore, Canada has so far insisted that it has no commitment to participate in any deployment of SDI. Defence Minister Erik Nielsen has scoffed re-

peatedly at any suggestion this policy may change. Nonetheless, it is a worthwhile exercise to understand what elements of current SDI planning might be deployed here and why.

Simply put, current thinking envisages a multi-layered defence umbrella which would guarantee the surveillance, tracking and eventual destruction of Soviet missiles or their warheads in all phases of their flight. (See diagram.)

### Layered Defence

Planners have broken down the flight path of strategic missiles and their warheads into four phases: 1) the *boost phase*, lasting several minutes, as the missiles are first launched by booster rockets; 2) the *post-boost phase*, lasting several more minutes after the boosters have fallen away, during which the 'bus', carrying multiple warheads, travels outside the atmosphere; 3) the *mid-course phase*, which can take up to 25 minutes, as the warheads, housed in "re-entry vehicles," are released from the bus and soar through outer space towards their targets; and 4) the *terminal phase*, lasting one to two minutes, as the warheads re-enter the atmosphere and home in on their targets.

A fully

integrated SDI system would be comprised of both sensors and interceptors. The sensors – based on land, aboard aircraft, and in space – would track Soviet missiles and their multiple warheads. These sensors would have to work faultlessly, sifting through hundreds of thousands of decoys and bits of metallic chaff to pick out the "real" targets.

Once these targets were identified, it would be up to yet-to-be developed lasers, particle-beam weapons, and interceptor missiles to destroy Soviet missiles in the boost phase, or their warheads in the mid-course and terminal phases. Some of these sensors and interceptor weapons would be space-based, but some would have to be stationed on land. That is where Canada would fit in.

Lying directly beneath the flight path of incoming Soviet warheads, Canada's far North might provide one of the best spots to deploy some of the land-based systems for tracking and interception. What follows is a rundown of some components that could be installed in Canada.

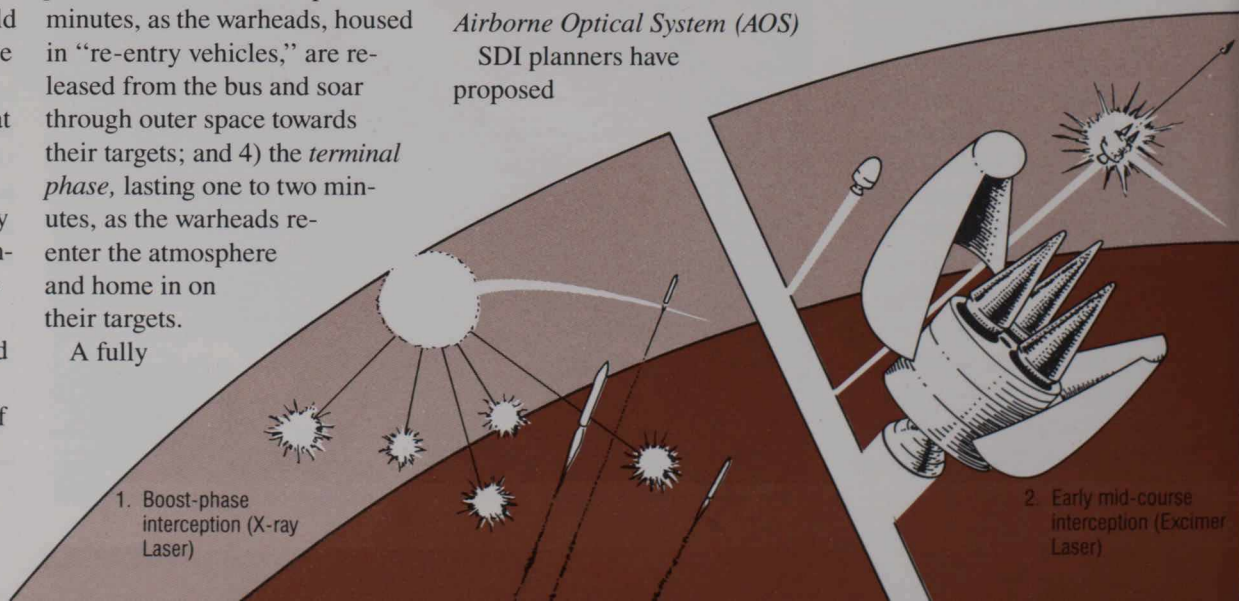
### Tracking Systems

#### Airborne Optical System (AOS)

SDI planners have proposed

modifying Boeing 767 jetliners to carry high-resolution infrared telescopes. These would track Soviet warheads in late mid-course and terminal phases, detecting the heat of the re-entry vehicles against the coldness of space.

Under current plans, anywhere from twenty to forty of the 767s would operate out of twelve patrol bases. There is even talk of development of remote-controlled, pilotless 767s which would fly several days at a time. The jets would fly at altitudes of between fifteen and twenty-five kilometres and cover an area with a radius of approximately 750 kilometres. This system has been under study for several years and the first test flight is set for 1988. To give maximum warning, it is thought these jets should be stationed as far north as possible and Canada's North is a prime location. However, even if they are stationed just south of the US/Canadian border these 767s would undoubtedly need to fly over Canadian territory to carry out their missions effectively.



1. Boost-phase interception (X-ray Laser)

2. Early mid-course interception (Excimer Laser)