Defence initiative defended?

When a substantial part of the technical community insists that ballistic missile defence is in some sense feasible, critics of the project should look elsewhere for ammunition.

THE odd thing about the real world is that the least popular causes are advocated by the most able and the most genial people. That, if you like, is the dilemma of journalism, the profession of telling it like it is. Ask an Afrikaaner about *apartheid*, and you will discover a man who has thought more about the benefits of paternalism than you would have thought possible; some way along the line, he knows, you will agree that all those hospitals are better than no hospitals.

Last month, before Mr George Shultz set off for Geneva for his meeting with Mr Andrei Gromyko, Washington was nicely abuzz with people's introspections about star wars, otherwise known as the Strategic Defense Initiative (SDI). (Somebody, one must be sure, has written a paper advocating the use of the good word "initiative.") Naturally, nobody is prepared to say explicitly what he plans to put in the paper he will thrust into Mr Shultz's hand. But most people are willing to talk about the cause that they espouse, however unpopular it may be.

Could the United States ever hope to defend itself against an all-out attack from a force of Soviet missiles? If so, how? And how soon, given that the most cogent objection to what should be described as the scenario is that it may never work? What follows is an account of what people in Washington were saying in December. It is based primarily on conversations with four senior officials of the US administration but particularly with Lieutenant-General J. (for "James") A. Abramson, the manager of the Strategic Defense Initiative..

Naturally, one begins with the most obvious assertion: surely a perfect defence against ballistic missiles cannot be effective, even though it may be ruinously expensive. One should, of course, have known better. People in Washington are now (or were even in December) so practised at dealing with this kind of question that they had not one answer but several, much in the spirit of the defending counsel who argues that his client could not have committed the crime of which he has been accused because he has a cast-iron alibi, because he could not have wielded the instrument that caused the damage and that, in any case, he did it in self-defence.

The case with star wars is however more complicated and more substantial. It's only a research programme, right? As with all research, we cannot tell in advance what we shall find. If we find it does not work, then so what? Nothing will have been lost. That, so to speak, is the alibi.

The intermediate arguments are necessarily more intricate. Abramson, whose office occupies an otherwise almost empty floor of a new downtown office building, not an annexe of the Pentagon, is an eloquent exponent of what might be done. Even as generals go, he has a quite formidable reputation. He came to star wars only after the project had been launched. He had just been manager of the space shuttle programme, having made his name as the man who built the F17 aircraft. One of SDI's most influential critics considers him the "best manager the Pentagon has had for years".

The general's style is not that of a tycoon, more that of an inventor. He is tall, fit, sparse and voluble, given to interspersing technical explanations with homilies on the importance of getting things right, while hunting for the right transparency in the muddled pile on the table. People who have built an aircraft as complicated as the F17 probably know in their bones that nothing but the best will work, and that the best will cost a lot.

The counsel's intermediate case is not hugely technical. These are early days, when no single way of attacking and destroying presumably hostile missiles can be singled out. For the time being, keep all options open. But lasers have the disadvantage of being inefficient in their use of energy, charged particle beams are necessarily so distorted by the Earth's magnetic field that their power density at a distance will be enormously decreased. Beams of neutral particles, say hydrogen atoms, look a much better bet.

But will not any such space-based weapon be vulnerable to countermeasures? Not necessarily. Since any attacking projectile will have to follow a ballistic trajectory, that too will be as visible as the satellites in which the SDI is embodied, and will not prudently be equipped with other than short-range mechanisms of destruction. So why not equip the satellites to evade whatever is sent to get them?

By these standards, the arguments there have been about the number of the satellite-based battle stations that would be necessary to destroy a hostile force of missiles appear to be mundane. Both the congressional Office of Technology Assessment and the Union of Concerned Scientists are probably right to have argued that the number required may be larger than the 180 or so that the Pentagon first calculated, but the Pentagon is probably right to argue, as it does implicitly, that only the first will cost really big money.

The temptation to base the case against star wars on the argument that its components will not function individually is probably mistaken. Enough people in the technical community seem in the past few months to have been persuaded that there is something in the scheme to give the lie to that. But it seems also to be agreed that the most formidable and still unsurmounted problem is that of handling the data from all those radars, and for deciding automatically, in minutes, how to respond.

The third line of defence against criticism takes two forms. First, because there are five phases during which hostile missiles can be attacked, with the first (soon after launch) and the last (when the decoys have been slowed by atmospheric resistance) most easily recognizable, so each single stage of the defensive system does not have to be perfect. Indeed, the defenders' advantage is even greater, because a hostile missile force would presumably have been assigned targets that must necessarily be destroyed, and will be bound to counter even imperfect defence by duplicating its chosen targets.

The second and newer defence is a continuation of that theme: the initiative is really a way of forcing an adversary to recognize that there is no alternative to arms control. Provided that the efficiency of the defensive system is more than nearly zero, there will be limits to the extent to which it can realistically be countered by building more strategic missiles. But how will an adversary know how effective the nascent system will be? For that matter, how will the designers know the performance of a system they cannot test?

There is necessarily a sense of unreality at this point. The most common complaints against SDI, that it cannot work, seem to outsiders to be belied by the numbers of intelligent people who are passionately persuaded otherwise. (But everybody admits that the cost could be unaffordable, or is at least a problem.) The strongest arguments against are strategic and political. But even there there is a defence; whatever happens to SDI's research phase, only the next US administration will have to decide what should be done.

John Maddox