

West European Response to S. D. I.



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Sanjay Kumar

Studies
CENTRE FOR POLITICAL SCIENCES
SCHOOL OF SOCIAL SCIENCES
JAWAHARLAL NEHRU UNIVERSITY
NEW DELHI—110067. INDIA

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Certified that the dissertation entitled "West European Response To SDI" submitted by Sanjay Kumar in partial fulfillment for the award of the Degree of Master of Philosophy of this University is his own work and has not been submitted previously in any University for the award of this or any other degree. We recommend that this dissertation may be placed before the examiners for evaluation.

S. N. Jha

CHAIRMAN
(Prof. S.N. Jha)

Chairman
Centre for Political Studies
Jawaharlal Nehru University
New Delhi-110067

Rakesh Gupta

SUPERVISOR
(Dr. Rakesh Gupta)

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SANJAY KUMAR

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INTRODUCTION

This dissertation focuses on the West European responses to Strategic Defence Initiative announced by the U.S. President Ronald Reagan in his speech on national security delivered to his nation on March 23, 1983. In the last five years, SDI has been the focus of debate on a whole range of issues like strategy, disarmament, alliance cohesion, U.S. Soviet relationship, peaceful uses of outerspace, military versus civilian use of science and technology.

The present study has focused on only a small aspect of the current issues that the SDI has raised. Since SDI represents a breakout from nuclear deterrence, the allies of the U.S. were bound to be affected by it. The U.S. NATO relationship has been very complex and difficult given the specificity of the differentiation in European identity and perception of the postwar Europe and the changes implicit in the strategic parity between the U.S. and the Soviet Union.

The differentiation and consensus building in NATO has been a constant endeavour as is evident from the position taken by the Europeans on the whole range of issues from Vietnam war to the oil crisis and the U.S. policies therein. SDI combined with the Gorbachev diplomacy to deal with Europe as European and with respective European countries on bilateral

basis has raised cries of decline of alliance cohesion and the necessity of preserving NATO alliance.

In this context, the West European response is viewed. Therefore the approach of the dissertation is political rather than technical or strategic . These however have crept into the dissertation of necessity as is evident from the fact that Chapter-1 deals with strategy while in other chapters the scientific and technological issues have been referred to.

From another angle the alliance relationship can also be viewed. After the Marshall Plan led to the recovery of Europe and Japan, it has been possible for these countries to compete with the U.S. for markets and that had led them to approach political crisis differently. Some of these countries had acquired excellence in some areas of science and technology. U.S. has always attempted to contain these centrifugal tendencies. SDI also represents that. So, SDI is perhaps an example of how military-industrial complexes are being transnationalised. This question we discuss in the conclusion.

It may therefore be noted that the two ideas on which this dissertation revolves are those of

strategic and economic cohesion. This is discussed in the last chapter. Chapters - 2, 3, 4 and 5 deal with features of SDI, British, French and West German responses.

Very little has been written on the West European response to SDI apart from journalistic articles. Practically, one can count the finite number of papers and articles on the issue in national and international journals, seminars and books. These have been included in the bibliography. It became necessary to depend on basic information as it trickled through the press initially. As these five years have evolved the trickle is becoming a torrent. Hence it became necessary to refer to specialised papers like Defence Daily, Inter Avia, Aerospace Daily and such other papers.

This chapter leaves out a discussion on Japan Israel and Italy since very little has come out on Italy which has signed a Memorandum of Understanding with the U.S. Japan and Israel have been left out because firstly they are not West European powers and secondly they are not in NATO.

This dissertation does not examine the science and technology base of the European countries which

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could be a stupendous task in itself. Secondly, the issue of linkages of science and technology with strategy and foreign policy could not have been manageably covered in a dissertation on responses.

This dissertation has been written with the above mentioned constraints.

CHAPTER - 1

DETERRENCE : MAD, MASS AND SDI

In today's usage "deterrence" is mostly equated with the defence policy of the Western security system. The countries of the West regard deterrence as indispensable to their security. They see it as a basis of 40 years of peace for countries that experienced two World Wars in the first half of the 20th century.

The Etymology of deterrence focuses on the element of terror that is inherent in nuclear weapons. In reality, deterrence - as defined by western countries is politically defensive in that it is intended to discourage aggression and, indeed, to remove the scourge of war in the nuclear age. It is intended to prevent nuclear terror, not to inflict it.

Deterrence is intrinsic to international conflict and the prospect of force throughout history. It is simply the means by which one state dissuades an adversary from taking an hostile action by convincing it that the risks and costs imposed by counteraction will exceed any expected gains, either because the adversary believes that it will be unable to achieve its objective or because it believes that it will cost too much or both.

Nuclear weapons that are capable of inflicting, suddenly, and with little warning enormous damage on adversary have created a quantum increase in the power of deterrence. When US and USSR can inflict inordinate nuclear damage on each other, a nuclear war could be self defeating for both. Stability of mutual deterrence depends not only on the Western powers convincing the eastern powers that aggression would be too costly but also on both sides having the kind of non-provocating weapons posture, effective command and control system and safeguards against wars by accident, or miscalculation that re-assure them against the danger of an unprovoked first strike.

That the doctrine of nuclear deterrence is effective and viable appears to be largely a matter of belief. There is no way of disapproving or approving it. So far, neither the US government nor the western allies have admitted that any nuclear threat on the part of the Soviet Union has deterred them on any occasion. Nor Soviet Side has explicitly expressed the feeling of getting deterred.

There are accounts of nuclear threats conveyed by President Eishenhower to China in 1953 on Korean issue. There may be strong reason to infer that deterrence

worked in this case. This occurred when the side that threatened had overwhelming nuclear superiority. Nothing has happened in an era of nuclear parity to give any clue whether nuclear deterrence would operate in the present strategic environment.¹

Though the doctrine of deterrence may be based only on certain beliefs it has not been possible to ignore it, since it forms the basis of the defense efforts and philosophy of the most powerful country on earth. Once a belief system in deterrence became entrenched, it was inevitable that the nations that subscribed to the doctrine of deterrence could be influenced within the framework of the same doctrine. So long as the most powerful group of nations subscribed to it, the rest of the world had to take note of it. Those who believed that they can deter others by their nuclear arsenal were bound to get deterred by others nuclear arsenals. In that sense, the doctrine of nuclear deterrence was a self fulfilling prophecy.²

Today, with both the super powers having stockpiles of nuclear weapons enough to destroy each other several times over, the doctrine of nuclear deterrence has been reduced to a continuous arms race regulated only by resource constraints, and the obsolescence factor of weapons.

Today deterrence is looked upon mostly as an operational strategic doctrine. Thus instead of politics influencing the strategy of deterrence, the latter tends to dominate relations among nations. Since the strategy of deterrence is based on the perceived need for a capability to dissuade an adversary of rival with hostile intention, the pursuit of deterrence has tended to freeze political relations in a continuing hostile posture.

Doctrine of deterrence, unfortunately has remained delinked from politics and was mostly pursued as a mechanical, operational, strategic doctrine, focussing excessively on weaponry, deployment posture & stockpiles. The linkage was done partially as is reflected in detente and the process of SALT. Since this did not lead to reduction of delivery systems and arsenals, qualitative arms race went ahead. Suspicion and hostility found new forms and created conditions of a new round of arms race.

Now let us scan through some countries view of deterrence. The French strategists underline the value of the concept of proportional deterrence, according to which a more powerful adversary could be deterred more effectively from any aggression by the sheer disproportion between the damage he might suffer through nuclear retaliation

compared with potential gains he hopes to achieve by attacking a smaller nuclear country.³ In the French view, this doctrine allows for the credibility of a relatively small independent nuclear force of a defensive character. French doctrine differs conceptually some what from the flexible response of NATO in that it does not link the first use of its nuclear systems to the impending breakdown or manifest inadequacy of direct (conventional) defense, but it regards jeopardy to the nations "vital interests" as a criterion for triggering a defensive nuclear response.

British nuclear systems are subordinated to NATO command, and it fully espouses NATO political objectives and its doctrine flexible response. The deterrent effect emanating from the British and French systems is enhanced by the fact that NATO Europe as a whole is covered by US strategic deterrent and the possibility and likelihood that any attack on western Europe would trigger United States involvement.⁴

On the other hand we have Soviets who employ two different meaning for deterrence. One concept refers to terrorization or intimidation and another concept which conveys the less threatening notion of restraining an opponent. In keeping with this semantic difference,

western policy of deterrence are condemned by Soviets and its allies as provocative and dangerous, while corresponding Soviet policies are praised as defensive countermeasures. The overriding objective of nuclear deterrence, in the Soviet view, is to deter a western nuclear response to an Eastern attack, and more broadly to hold western Europe hostage to Soviet political will under the gun of overwhelming conventional and nuclear power.⁵

As a part of its pre-war deterrent stance Soviet union proclaims that once the first nuclear weapon is used, rapid escalation to the highest strategic level is inevitable leading to a ultimate holocaust that cannot possibly be prevented.

Soviet Union considers that it is strategic military parity, not deterrence, which ensures peace. Nuclear deterrence, and intimidation cannot serve a basis for lasting international security and stability because security cannot be based ad-infinitum on the threat of force, which whips up the arms race. Putting into practice the tenets of nuclear deterrence undermines the strategic balance.

Soviet Union considers strategic military

parity not an end in itself, but a point of departure for reducing and ultimately fully eliminating the threat of nuclear war. Soviet military doctrine is based on the fact that the strategic balance, founded on the principle of equality and equal security creates objective, incentives for reducing the futile and dangerous competition in the military field and is a pre-requisite for lessening military and political confrontation.

According to the Soviet Union the problem of security is a political one and needs to be politically settled. First of all it is necessary to have the political will to halt the arms race, which has become the main source of the threat of nuclear war, and to begin to move towards disarmament. There is no rational alternative to a world free of war and nuclear conflict. The recognition of this principle has been in fact the starting point of Soviet military doctrine at all the post war stages of its development.

Common to all strategic doctrines of the post-war period is the role of nuclear energy. President Truman said, "America's security and the security of the free world depended to a large degree on our leadership in the field of nuclear energy."

The United States strategic Bombing Survey (1946)

discussed war in Europe and the Far East and noted that "the best way to win a war is to prevent it from occurring ... Prevention of war will not be furthered by neglect of strength or lack of foresight or alertness on our part". The document is saying two things at the same time : Have peace and remain prepared for war by building up strength. Strength will be built up by constantly modernising the weapons system. Since technological changes are constantly destabilising any balance of power, so the US has to furiously pursue technological race and feed an arms race.

A general nuclear war was planned. Roven^h considers that there are four views about general nuclear war, viz world annihilation. Deterrence plus Insurance, extended deterrence and Massive Retaliation as a doctrine. Massive Retaliation propounded by John Foster Dulles in Jan 1954 meant that "we would use the direct threat of general war, or of any military response which would carry with it a substantial likelihood of general war, in defence of a wide range of peripheral areas". It was not a defensive strategy for it stipulated the large scale use of nuclear weapons by the US against the Soviet Union or China in defense of most of its allies around the periphery. Such a large scale war would be a general

nuclear war.

During the phase of the doctrine of Massive Retaliation talk of "bomber gap" was made. This soon led to the talk of "missiles gap" which became the basis of a new doctrine in the 1960's that of deterrence through multiple response strategy.

John F. Kennedy supported the idea of missile gap. Kennedy thought that the missile gap may encourage the Soviet to harm American interest in the periphery. Kennedy proposals for strategic doctrine were three pronged, viz proposals for the security of the US against a missile attack by Soviet Union, protection of the second element of the core-tactical nuclear weapons and conventional forces. The other side of the coin was a process of disarmament. While Kennedy ordered build up of ICBM and IRBM of atomic submarines, solid fuels, the polaris and minuteman; he went in for PTBT. In a similar fashion Nixon proposed SALT I. Carter engaged in SALT II and at the same time goaded NATO into accepting Pershing II and cruise missiles in 1979.

Kennedy was supported by R Mc Namara (Secretary of defence) who came to be identified with deterrence. Mc Namara strategy is described by Kaufmann as thus, "the

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approach of multiple option, with continued Emphasis on the non-nuclear end of weapons spectrum, left the country with the kind of flexibility that it needed in the face of all the uncertainties. Not only did it offer the President usable power - and therefore deterrent power - in the event of future crisis, it also permitted him greater initiations in the field of arms control. The more the power of the US rested on diversified capabilities, the easier it would be to reach agreements on measures of arms control, without running the risk of immobilising needed American strength. And the larger the number of options, the smaller the chance, that, in the event of conflict, the catastrophe of general nuclear war would ensure".⁶

Mc Namara in a speech at Atlanta in Nov. 1961 said, "the core of our deterrent power is our nuclear strike force"⁷ Apart from bolstering nuclear force the strategy involved a non-nuclear build up to deter or fight local aggression.

The second element in the Mc Namara strategy was defence of Europe. It emphasised on conventional build up. It allowed for an adjunct role to the theatre nuclear weapons. However this strategic element was

to operate within the overall US strategic umbrella.

Modernisation plans too were to operate within the doctrine of MAD.

Mc Namara said :

"I believe myself that a counterforce strategy is most likely to apply in circumstances in which both sides have the capability of surviving the first strike and retaliating selectively. This is highly unpredictable business, of course. But today, following a surprise attack on us, we would still have the power to respond with overwhelming force, and they would not then have the capability of a further strike. In this situation, given the highly irrational act of an attempted first strike against us, such a strike seems most likely to take the form of an all out attack on both military attacks and population centres. This is why a nuclear exchange confined to military targets seems more possible, not less, when both sides have a sure second strike capability. Then you might have a more stable "balance of terror".⁸

In essence, the Kennedy-Mc Namara strategy, emphasized on graduated response all along the spectrum

of violence from massive second nuclear strike in a bilateral exchange between US and USSR, the main reliance on conventional forces backed up by tactical nuclear weapons and US nuclear umbrella in Europe to a graduated conventional response in other centres of the periphery. Kaufmann regards that the Cuban missile crisis limited the conflict because behind American strategy was the shield of strategic nuclear power...

Payne B. Keith rejects western deterrence Model which in other words means assured vulnerability framework of security. According to him the assured vulnerability Model of deterrence is based on four central assumptions.⁹ These are as follows

- 1) State leaders make decisions of war according to similar rational means of evaluation of cost and benefits. If the cost involved in a war are anticipated to offset potential gains then there is little probability that a decision to initiate nuclear conflict could occur.
- 2) Soviet population and/or industry are the important objects that should be threatened for the purpose of deterring provocative Soviet behaviour. The "MASSIVE" loss that should be incurred in case of war has been quantified by Mc Namara 20-25% of population

and 50% of industrial base are said to be sufficient to offset any potential gains.

3) Soviet Union is determined to hold a high percentage of American urban and Industrial asset as hostage for the purpose of deterrence. Thus American cities cannot be removed significantly from the risk of attack by Soviet strategic forces. Advocates of MAD acknowledge the fact that casualties could be reduced through damage limitation programmes, they judge that the loss level would still be unacceptable and strategic damage limitation programme like the ABM is not worth the cost.

4) Any use of strategic nuclear weapons would be certain to escalate to all-out strategic war or at least unacceptable damage. Escalation seems to be inevitable because :

- 1) the pressure to use strategic weapons before they are destroyed.
- 2) Inability of either side to communicate limited intentions while employing strategic nuclear weapons.
- 3) Existence of strong pressure on both sides to escalate at each stage of conflict in search of a more favourable bargaining position.
- 4) The risk that limited yet highly provocative

behaviour, such as nuclear or non nuclear attack on United States alliance members, would initiate a process of all-out escalation is sufficient to deter the Soviet Union from highly provocative behaviour.

These four assumptions of assured vulnerability lead logically to the following implications.

1. Damage limitation capability is not feasible and would cause crisis instability by forcing Soviet leaders to doubt the credibility of their deterrent, it would also lead to an arms race instability by forcing the Soviets to overcome US defence via increased offensive deployments.
2. Once each side is in possession of assured destruction capability the possibility of a limited and central war is negligible.
3. Neither side will consciously provoke the other beyond its threshold of tolerance. To pursue a strategic strategic superiority would be futile and dangerous.
4. There can exist no rational operational strategic nuclear employment policy because any nuclear use will escalate to all-out war and mutual destruction. Nevertheless, because soviets greatly fear the risk of escalation, they

will not provoke the US through limited threats against the US and its allies.

The assumption that national leaders use a rational cost benefit analysis to decision making is central to assured vulnerability mode. MAD assumes that the opponents' decision of nuclear war and peace are calculated decisions, and calculated according to a trade off between anticipated gains and losses.

What is of fundamental importance here is the opponents perception of anticipated costs and gains. To the extent that the opponent could miscalculate or misjudge values, intentions, commitments, or capabilities deterrence could fail. Payne points out that national leaders do not always or perhaps even usually base the decisions upon precise-rational calculations. Some analyst gives us a quantified cost benefit analysis. If this was to be true then it would be probably the first time in history that a decision of war and peace would have been made according to numerical outcome of a formal, mathematical cost benefit calculations.

For example, facing the political devolution of their eastern European empire and/or domestic nationalities Soviet Union could consider the final "systemic war" with the

West to be the only possibility of salvaging their regime. Soviet Union would not have to anticipate victory, or even a probability of surviving the option of nuclear war would only have to be viewed as presenting a possibility of solving the problem of the anticipated certain destruction of regime. If Soviet~~s~~ saw only a remote possibility of defeating US or intimidating US into conciliation, it could prefer the uncertainty of war to the loss of the socialist motherland.

Evidently Japan initiated the pacific war without a confident theory for defeating the US, but preferred waging a war and "going down" honourably to accepting foreign domination. Hence it is indicated that in a very desperate situation even a war likely to lead to defeat can be a preferred option. One must wonder whether it would be possible to deter an opponenet who perceives general war not as a means of general gain, but as the only means of solving a fatal political crisis. This is the context where MAD fails.

An analysis will make it clearer. Suppose a notorious and well armed criminal held up in a burning house that is being guarded by several well armed deputies. If the criminal thinks that there is no way to survive

the fire, he will almost certainly accept the great risks associated with leaving the house in the faint hope of being able to kill the deputies. Though the chances of escape are very marginal yet he will choose the option of leaving the fire house which is a more miserable option.¹⁰

Hence, if a deterrence model is unable to address to the type of motivations that probably would determine decision making regarding nuclear war, then it should be seen as an unacceptable theoretical basis for strategic planning.

The assured vulnerability assumption that urban and industrial assets are the objects of value for deterrence is also a point of theoretical weakness. This assumption may reflect convenience more than actual intellectual commitment. It is not impossible to find in history examples of leaders who were willing to sacrifice very large numbers of citizen and economic productivity for political purposes. This is not to say that threatening of urban and industrial assets may not provide a potent deterrent threat in some or more cases particularly with western style of democracies. Moreover, to simply assume without prior analysis that

such a threat is appropriate, and to base^d deterrence theory upon that assumption is a point of theoretical weakness.

The notion that any use of strategic nuclear weapons would be perceived as likely to escalate to a mutually destructive central war is an essential element of assured vulnerability reasoning though there is a problem of evidence regarding any specific conclusion, there would seem to exist in the context of mutual vulnerability a number of reasons why conscious limitation could attend the initial use of nuclear weapons, and even the duration of central war. These reasons include.

- ... limited intentions and wartime objectives.
- ... a mutual desire to avoid unconstrained urban industrial targeting.
- ... a desire by the Soviet or the Americans to conciliate rather than risk nuclear war of continued escalation.

At another level, the peace and freeze movement rejected mutual terror doctrine and suggested the freeze and reduction of armaments. MAD was regarded as morally inoffensive, though in immediate future pragmatically

necessary. Responses to these have been Gray's MASS; Reagan's SDI and Gorbachov comprehensive international security.

Colin, S. Gray developed the Assured Survival Strategy (ASS) or in other words Mutual assured Survival Strategy (MASS)^F. He is joined by Payne - The assumption of MAD - (Mutual assured destruction) had assumed a convergence of interests between US and USSR for preventing a nuclear war. Mc Namara, as pointed out earlier has expressed the hope of common security perceptions to prevent a nuclear war. Cyrus Vance had underlined common security while discussing the US - Soviet engagement in detente a convergence of interest became rational behind this thinking. Colin, S. Gray, adviser on military affairs to the President, and spokesman of the new right deny such commonality by questioning such convergence thesis Colin, S. Gray writes.

"The Strategic Soviet cultural attitude that flows from its history make it unlikely that Soviet Union will join US in managing a stable military balance. The Soviet commitment to compete for relative advantage is so fundamental, and so rational in Soviet terms that stability can only be forced."¹¹ He narrates historical ideological and geopolitical factor giving rise to Soviet aggressiveness.

Ignoring the US militant history, Pipes builds the thesis that historical, ideological and political factors have made militarism central to Soviet state, economy, politics, foreign policy and psychology as indicated by its use from small state of Muscovy to the present giant military strategy.¹² He contrasts this militarism with central values of western societies in the following words. "Militarism seems to be as central to Soviet communism as the pursuit of profit is to societies with market oriented economics". He sees this fundamental divergence between placid dove of market economy and the menacing hawk of Soviet Communism without pausing to consider the linkages between market economy and militarism capacity to overkill the causers of profit through the instrument of overkill.

Colin, S. Gray elaborating his perspective says that the US should have the scope to

- 1) Initiate central strategic nuclear employment in expectation of gain.
- 2) Seize and hold a position of escalation dominance.
- 3) Deter Soviet escalation, or counter escalation, by a potent threat posed to the most vital assets of the Soviet State and by the ability of the US to limit damage to itself. Thus this strategy visualises a central nuclear war in which tens of millions of American casualties

will take place.¹³

ASS or MASS marks a transition from common security to unilateral consideration of national security in which Soviet Union is considered the "evil centre", symbolising the villain of the piece of market economies.



The present strategy, as also, the earlier strategies, is based on the development of science and technology. To put it differently, new breakthrough at the research and development level lead to a design to apply these to weapons systems, which in turn leads to changes in strategic doctrines in the US. Three generations of nuclear weapons have so far made their appearance. The first generation nuclear weapons led to the doctrine of containment, the second generation to the doctrine of deterrence and the third generation to the doctrine of limited, protracted, winnable and survivable nuclear war -

The first generation of nuclear weapons were used. The atom bomb based on fission was dropped in Japan. With the development, it was possible to think of nuclear force posture in Europe, which would be deterrent to Soviet advantages of land armies. The US till the time, it had monopoly of these A and H bombs believed in their use mainly on the basis of strategic

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bombing. Once the Soviets got them and once research missiles reached the nodal point of usage, the doctrine changed during the Kennedy - Kissinger phase, accelerating the arms phase.

The second generation of nuclear weapons compensate for limitations of the first generation ones. The second generation of nuclear weapons were not a bright spark of a scientist overnight. They were result of long-phase research and development funded by the military establishment.

The third generation weapons are directed energy weapons. Instead of exploding in directionless way these are directed in a concentrated beam towards its objects. They produce rays of energetic particles and project them directly on the target. Gos poner indicates the development in three categories of directed energy weapons; laser beams, microwave beams and particle beams. It was in the 1960's that breakthrough in laser fusions was achieved and 1980's saw the possibility of weapons being developed on the basis of weapons laser fusion. Laser fusion can be achieved both by using chemical and nuclear material. It may lead to solving energy problems but in the intermediate period of military

establishment plays war games and it can be used against missiles and satellite. The microwave beam weapons can be used against satellites. The particle beam weapons are high energy weapons and having similar application as the other two.

The MASS strategy wants to secure the strategic forces and at the same time engage in a central war to defeat the enemy and survive as a 20th century power with acceptable damage. Bhupendra Jasani mention two new areas which have direct relevance to such a strategy

- 1) Development in nuclear weapons
- 2) Advances made in military space technology

The latter includes improvement in space based sensors for surveillance; in communication command and control system; and in the space based navigation technology which enhances the accuracies of the delivery systems for both conventional and nuclear weapons.

On March 23rd 1983 President Reagan set into motion a process that has the potential to alter radically the traditional emphasis upon offensive forces in the US strategic force posture. President's science advisor George Keywarth noted, "we can now project the technology - even though it hasn't been demonstrated yet - to develop a

defense system that could drastically reduce the threat of attack by nuclear weapons, not only of today, but those that could reasonably be expected to be developed to counter such a defense system".

The Strategic Defence Initiative, according to pronouncement by the Reagan administration, has its objective as a "total, defense, against nuclear weapons". In a recent report to Congress Dr. Richard De Laurer (under Secretary of defense) observed that, "the principal purpose of strategic defense is to enhance the survivability".

It is possible that even if defensive technology proves feasible, the transition to strategic defense could be unacceptably dangerous. Stability during a defensive transition would need to be maintained by preserving the US strategic retaliatory capability in the face of improving Soviet defenses.

During a defensive transition these are likely to be at least three destabilizing factors.

- 1) Soviet Union may consider initial US deployment of BMD systems or components in space to be so inimical to Soviet security that they may decide to disable them.
- 2) SDI could endanger stability because it is likely to lead to an initial Soviet advantage in deployed

strategic defenses. Defense Department's annual edition of Soviet Military Power observes.

"The Soviets have developed a rapidly deployable ABM system for which sites could be built in months instead of years ... The Soviets seem to have placed themselves in a position to field relatively quickly a nationwide ABM system should they decide to do so".

3) At a more advanced phase of a defensive transition both sides may have achieved a capability to defend effectively against light attacks, or a retaliatory attack by forces that has been degraded via preemption. In such a condition both sides could perceive powerful incentives to strike first. To delay striking first during a crisis could grant the opponent the opportunity to preempt. This type of instability is labelled "crisis instability". This is thought to apply when a significant advantage would accrue to the side striking first, and when the disincentives to striking first are reduced because retaliation threats are not affective.

US wants to minimize the instability caused by defensive transition by modernizing, its offensive weapons. Such modernization could include a variety of method for nullifying initial Soviet BMD deployment, (MIRV, Cruise missile)

US believes that the role of offensive weapons during any defensive transition would be essential to stability. In a "defense dominated" environment offensive forces would play a reduced but still, important role. Offensive forces would still provide deterrent leverage in a defense dominant strategic environment. The role of offensive and defensive forces during and following a transition should be to ensure that the US is never left in a dilemma where it possesses neither adequate defense to protect its own society nor retain adequate offensive forces capable of putting at risk the Soviet leadership and its sources of military and political control.

Over the course of the last two decades stability has come to be closely identified with an offensive punitive approach to deterrence. However Keith B. Payne holds the view that mutual vulnerability is not a necessary condition for stability. Strategic defense and reduction of US vulnerability to attack can also be compatible with deterrence and pursuit of stability. Effective strategic defenses would preserve US offensive force and deny the Soviet Union the prospect of defeating the US. In contrast to the current punitive orientation a defensive deterrent would be predicated upon the inability

of the Soviet Union to defeat the US and the long term threat that US military mobilization would pose to the Soviet Union. Effective strategic defenses could establish a deterrent based on "denial of victory" and a defensive deterrent should be vastly more credible than the current punitive approach. US leaders will be perceived by opponents as more willing to engage in defensive actions than punitive self-destructive actions.

We see that United States is not only interested in acquiring a defense shield but it also proposes to modernise its offensive forces. They are not sure whether SDI will provide them a partial or a comprehensive shield. They are still experimenting with it.

Secondly we note that US assumes the responsibility of saving mankind from the evil consequences of Soviet attack. They believe that their nuclear arsenal are holy and would save the civilization from the unholy communist. This is a very pious view apparently, but we should always be on our guard against such pious proclamation.¹⁴

Soviet Union considers that it is strategic military parity, not deterrence, which ensures peace. Nuclear deterrence and intimidation cannot serve as a basis for lasting international security and stability

because security cannot be based ad-infinitum on the threat of force which whips up the arms race. Putting into practice the tenets of nuclear deterrence undermines the strategic balance.

Moreover the Soviet Union considers strategic military parity not an end in itself, but a point of departure or reducing and ultimately fully eliminating the threat of nuclear war. As for the Soviet military doctrine, it is based on the fact that the strategic balance founded on the principle of equality and equal security, creates objective incentives for reducing the futile and dangerous competition in the military field and is a pre-requisite for lessening military and political confrontation. The problem is a political one and can be solved by political means.¹⁵

United Kingdom announced participation in SDI in Dec. 1985 when a memorandum of understanding to that effect was signed by US and the UK. West Germany was next to fall in line in April 1986 followed by Israel in May 1986. Canada and Italy have also announced their intention to participate.

Till SDI comes, there may be an intermediate regime in which deterrence may continue despite immediate deployment of some aspects of SDI.

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MILITARIZATION/WEAPONIZATION OF OUTER SPACE

The growing of importance of outer space for Military purposes has caught considerable attention in recent times. In all likelihood space will become a hot bed for arms race in the near future. Though weapon systems have yet to be deployed here, space has been an integral part of the super power arms race for over twenty five years. Serious attention was given to the potential military utility of artificial satellites as early as 1945, well before the launch of the first satellite in 1957. By early 1960's military satellites designed to perform a wide range of mission were being regularly launched.

Though American military space policy began in the year 1954, the real challenge to it was posed by launching of Sputnik by USSR. The launch of Sputnik made clear certain facts. Firstly that USSR surpassed U.S. in scientific and technological accomplishment in outer space, which captured the admiration of the world. If it maintained this superiority it would amount to undermining the prestige and leadership of U.S. and, secondly as USA viewed it USSR may use its superior military capability to create imbalance of power.¹

Eishenhower had to review USA policy in light of these developments. According to James Killian, Sputni

created a "crisis of confidence"². The launching of Sputnik-II on 2nd Nov. 1957 made the matters worse. Public opinion could not be assuaged by Eishenhower insistence on peaceful space policy.

As a result of this EXPLORER I (an army satellite programmes) was launched on 31st January 1958. A new agency Advanced Research Projects of Agency (ARPA) was created with the responsibility space projects. Besides this NASA a civilian organization was also set up. The creation of these new agencies resulted in rivalries among the services.

Because of inter services rivalry the President transferred the responsibility developing military space projects to service and ARPA was left to conduct basic research on advanced military technology.

U.S. during Eishenhower administration emphasized the need for peaceful exploration of space and keep it free from weapons. This stemmed from the fact that it considered its satellite vital and was in no way wanting to start a satellite warfare. U.S. stressed on international verification of space activities and desired prohibition of weapons of mass destruction to placed in space. During the Eisenhower tenure US Space Act was passed with the aim of separate civilian and military aspects of space SDI threatened this seperation.

During Kennedy's presidency a committee headed by Jerome Wiesner went into the space policy. The committee concluded that U.S.A. was lagging behind Soviets, in space technology. The reason for this was poor co-ordination between NASA, Department of Defense and the three services. It also suggested revitalization of National Aeronautics and Space Council (NASC). Certain changes were effected in the light of these conclusions. Air Force became primarily involved in military R&D, though it did not have monopoly over it.

Another sphere of change was the amount of secrecy to be maintained. During Eisenhower time a policy of openness was followed to gain support for peaceful image of U.S. space programme. By the time Kennedy took over, this policy began to be reevaluated in the light the demise of U-2 flights over Soviet Union.

Kennedy, on entering office, directed Mc Mamara not to give advance notice of U.S. military space flights. Hence information regarding SAMOS flights were very less. However the Air Force continued volunteering information of its space activities much to the annoyance of the President. A "black out" directive was issued on 23rd March 1962 prohibiting advance announcement of military

space launching at Cape Canaveral. The programme names was to be replaced by numbers.

"Defense officials are justifying the secrecy on the grounds that it will lessen the chances of provoking attacks on the U.S. space programme by Russia and other foreign countries ... These officials contend that announcing U-2 flights over Russia in advance would have had the provoking effect they hoped to avoid under the new secrecy policy.³

This "blackout" directive was criticized by Congress, NASA and industrial contractors. They viewed this directive as detrimental to the space policy. However, the directive remained in force.

Kennedy presidential campaign issues involved a commitment to enlarge and pursue military space policy. Air Force had particularly become hopeful when Kennedy took over, but were disappointed as military space budget did not allow any projects that were denied by the previous administration.

Mc Namara instructed the army to proceed with the development of a modified Mike Zeus system. The code name was MUFLAP in its developmental stage and later it came to be known as Programme 505. It became operational

on 1st August 1963. U.S. ASAT programme was officially disclosed in Sept 1964.

A New York times article said that DOD was "embarking upon a man in space programme to prevent foreign military control of space as well as its exploitation⁴."

Officials denied the report as it was interpreted as reversal of original policy of peaceful exploitation of space.

President Johnson was left, to further develop the U.S. space policy. Soviet's space programme always haunted the Americans. It again resurfaced when Soviet began testing a Fractional orbital Bombardment system in 1967 (FORBS). As a result, requirement for additional or improved U.S. ASAT system was discussed periodically. Another controversial issue was the decision to allow the Air Force to develop a manned space system after numerous rejections.

Johnson announced the existence of two ASAT systems and over the Horizon (OTH) radar programme. The disclosure did not affect national or international scene in any considerable way. Research was authorized to improve the credibility of the two existing systems.

Johnson administration got interested in manned military space activity. Mc Namara on 10th Dec 1963 announced that U.S. will proceed with feasibility studies of a new earth Manned Orbiting Laboratory (MOL). Through this projects, two astronants would be able to move freely without space suits and conduct obvervations and experiments. DOD officials remained unconvinced with the utility of MOL.

Another significant development during Johnson administration was signing of Outer Space Treaty 1967. It called upon signatories to desist from arming space with nuclear weapons or any other weapons of mass destructions. Space should be used for peaceful purposes.

In 1969, a Space Task Group was appointed to go into the future space programme. This group recommended overall cost reduction of the national space programme, extending man's capability of line and work in space, practical space applications and international co-operation. Keeping in view the recommendation of the committee, MOL project was termination.

Carter followed a "twin policy" of seeking an arms control on one hand and continuing the ASAT programme which was meant to be a bargaining chip. Speaking of ASAT arms control Carter said on 9th March 1977.

"I have proposed both directly and indirectly to the Soviet Union, publicly and privately, that we try to identify those items on which there is relatively close agreement - not completely yet, because details are very difficult on occasion. But I have for instance suggested, we forego the opportunity to arm satellite bodies and also to forego the opportunity to destroy observation satellites."⁵

During Carter administration an effort was made to reach an ASAT control treaty. This effort did not fructify. The Soviet Union wanted to bring space shuttle programme of U.S. on negotiating table and U.S. was not ready to do it. While Soviets were ready to discuss an ASAT testing moratorium they were not willing to talk about the dismantlement of their ASAT system. At this juncture, Soviet entered Afghanistan episode, a campaign against SALT-II was being conducted by ultra radical right in the U.S. and the republican candidate for the coming election Ronald Reagan led this attack.

With the ascendancy of Reagan, the national Security Council was directed to review national space policy (August 81). An interagency group chaired by Dr. Victor M. Reis was formed to conduct the study effort.

Even before the committee could submit its findings Reagan rejected Soviet offer to discuss a draft space weapon treaty that was submitted to UN general assembly. On 5th October 1981, Caspar Weinberger, the new Secretary of Defense, unveiled the Reagan "Strategic Modernization Programme and declared before the Senate armed services committee that U.S. would "continue to pursue an operational ASAT system". Military space systems received a greater emphasis in the modernization programme.

The very basic objective to continue ASAT programme during Reagan also underwent change. Now the goal was deterrence i.e. ...

"The U.S. will proceed with development of an anti-satellite with operational deployment as a goal. The primary purpose of a U.S. ASAT capability are to deter threats to space systems of the U.S. and its allies and, within such limits imposed by international laws, to deny any adversary the use of space based systems that provide support to hostile military forces".⁶

The goal was different from previous administrations and also Carter twin track policy. The possibility of deterrence working in space had been rejected outright and by the then under secretary of defence Research and

Engineers, Seymour Zieberg.

Another novel feature of the Reagan administration's military space policy was the discussion on the projection of force from space. The fiscal 1984-88 Defense guidance reportedly stated that :

"The Department of Defense will vigorously pursue technology and systems both to provide responsive support and to project force in and from space as needed."⁷

The defense guidance 1985-89 said :

"We must achieve capabilities to ensure free access to and use of space in peace and war, deny the wartime use of space to adversaries ... and apply military force from space if that becomes necessary"⁸.

Space Master plan talked in a similar vein setting the objective for 2000 A.D. It called for a space combat system for force projection, to protect Air force assets and to deny the enemy unfettered access to space. An air force space command was formed with headquarters at Colorado Springs.

On 15th June 1983, the U.S. Navy also announced that it was also creating its own space command. This move was intended to consolidate Navy existing space

activities and also designed to resist air force attempt to control all DOD space assets under a unified command.

Though U.S. ASAT programme was announced in Oct 1981 contract worth \$ 418.8 million were awarded to Vought and Boeing within a week's time of Reagan's take over. This was to cover necessary R&D through to the end of FY 1985. In justifying the U.S. ASAT programme, the Reagan administration highlighted the threatening nature of Soviet space activities. This was also a deviation from earlier policies. In contrast to its predecessors, the Reagan administration also credited the Soviet Union with a near-term directed energy weapons capability.

In a dramatic change of policy President Reagan announced the S.D.I. programme on 23rd March 1983 in which he clearly stated that he was initiating a major ballistic missile defence study effort.

"The subject I want to discuss with you, peace and national security is both timely and important. Timely because I have reached a decision which offers a new hope for our children in the 21st century ...

I have become more and more deeply convinced that human spirit must be capable of rising above dealing with

other nations and human being by threatening their existence ...

What if free people could live secure in the knowledge that their security did not rest upon the threat of instant U.S. retaliation to deter a Soviet attack that we could intercept and destroy strategic ballistic missiles before they reached our own soil or that of our allies...

I know this is a formidable, technical task, one that may not be accomplished before the end of this century. Yet, current technology has attained such a level of sophistication, where it's reasonable for us to begin... consistent with our obligations of the ABM treaty and recognising the need for closer consultation with our allies, I am taking an important first step. I am directing a comprehensive and intensive effort define a long term research and development program to begin to achieve our ultimate goal of eliminating the threat posed by strategic nuclear missiles...

There will be risks, and the results take time. But I believe we can do it. As we cross this threshold, I ask for your prayers and your support".⁹

Very few had anticipated Reagan's March 23rd

speech. Almost everyone was caught by surprise, including those who were most closely associated with A.B.M. research efforts. Even Secretaries Weinberger and Schultz were only told in the final stages of its preparation.

In 1983, Reagan surprised, if not Shocked and stunned, the world by his now famously called Star Wars speech in which he wanted -

- a. The scientific community to give the means of rendering nuclear weapons impotent and obsolete, though he opposed nuclear freeze.
- b. Turning to the strenghts of technology of USA, he posed the question "What if free people could live secure in the knowledge that their security did not rest upon the threat of instant U.S. retaliation to deter Soviet attack."⁹
- c. He recognized that this was not possible in this century.
- d. He also suggested that in the interim the U.S. could pursue reduction in nuclear arms, modernize U.S. strategic forces, and reduce the risk of a conventional war escalating into a nuclear war by improving non-nuclear capabilities.¹⁰

After President Reagan's speech, there was a lot of confusion. No one was sure, what the President had actually called for. When Weinberger was asked whether the plan called for complete population defence, he replied that president was talking of a fully dependable defence system. However, a few days later, Weinberger began to backpedal; the President was not looking for a single system that would defend flawlessly against all missilies, but a series of BMD layers "which taken together" would provide relative defense. The fact was that no one had a clean picuture whether S.D.I. would be a comprehensive or partial defense system. Neither the effectiveness of the BMD was clear.

President Reagan did not care to consult its most trusted European allies before announcing S.D.I. This led to a lot of resentment among the West European countries. Even the most trusted friend of America i.e. Britain signed Memorandum of Understanding as late as 1985.

Two days after, Reagan speech, he signed NSDD 85, entitled "Eliminating the threat from Ballistic Missiles". This directed the bureaucracy to conduct "an intensive effort to define a long term research and development

programme aimed at an ultimate goal of eliminating the threat posed by nuclear ballistic missiles".¹¹

Fletcher Panel and Hoff Man panel was constituted to go into the questions. The Fletcher panel went into the technical evaluation of the S.D.I. project. It's conclusion were optimistic. It expressed a hope that with the help of new emerging technology a robust multitiered ballistic missile defence system can eventually made to work.

The Hoffman panel which went into the political and strategic implications also sounded enthusiastic about the need for more BMD research and development.

The content of both these reports were reduced to a set of common recommendation to the President. The recommendation was a green signal for U.S. to go ahead with its programme of BMD technology. The research was however, to be conducted within the limits of existing treaties, notably the 1972 ABM treaty.

However there was a section in Reagan's administration who were not convinced by the positive tone of recommendations of both the panels. Richard De. Lauer testified to the Congress in Nov 1983 that technological

challenges involved in the BMD effort would be greater than those faced by the Manhattan and Appolo projects and he even warned the congress of the staggering cost.

Even before 23rd March 1983, some people had been advocating revolutionary change in approach towards national defense. Senatar Malcolm Wallop had supported a crash programme to develop space based lasers. He expressed his views as early as in 1979.

"Technology now promises a considerable measure of safety from the threat of ballistic missiles".¹²

Another voice was that of General Daniel Graham, (a retired U.S. army personnel) who presented the High Frontier proposal to deploy space-based rocket launched projectiles to intercept boosters. Teller urged the development of nuclear driven directed energy weapons.

The NSDD 119 was signed on January 1984 by President Reagan which finally authorized the STAR WAR programme. The directive was cautious enough to refer to the programme as S.D.I. and not ABM research to avoid criticism that it was undermining the ABM treaty. Moreover, the term "Research" was used instead of "Development".

There were many technical problems which had to

be overcome before any effective defense could be had. Let us see some of the general technical impediments. Usually a missile passes through four phases. We shall try to see the problems related to each of these phase.

1. BOOST PHASE

In this phase of the ballistic missile the flame from the booster's rocket motors provides a very bright marker that is easy to detect by a space based sensors and serve as an aim point for the defense weapons. A single successful interceptor would destroy all the war heads and decoys carried by the missile.

Here the problem lies in the fact that boost phase is a very brief time in which to intercept a thousand of missile will be difficult. Moreover offense may redesign and deploy entirely new missiles to reduce the duration of their boost phase.

2. POST BOOST PHASE

This is the phase when the "bus" releases ten or more warheads and hundreds of decoys. The defense may still be of some advantage if it can intercept the "bus" before it releases the warheads and decoys.

Here the challenge is that the bus maneuvering

engines are much smaller and more difficult to detect than the booster motors.

3. MID-COURSE PHASE

The advantages to defense, in this phase is the long time available to locate and destroy targets (10-15 minutes for I.C.B.M.).

But here also the task of defence becomes difficult by the sheer number of warheads and decoys that may be released. The offense can try to complicate the task by deploying clever decoys and warheads inside of decoys. The defense must be able to either discriminate warheads from decoys or make interceptions so cheap and easy that it can attack all of them.

4. TERMINAL PHASE

Here the advantage to defense is that the atmosphere will have shifted out. Most or all of the decoys and the defense has the option of preferentially intercepting only those war heads that are still heading towards important targets on the ground.

The challenge is that of the little time available, perhaps 30-40 seconds to carry out interception.

Moreover at each defensive tier the defense must carry out four essential function.

SURVEILLANCE; ACQUISITION; DISCRIMINATION; AND KILL
ASSESSMENT.

Acquisition and discrimination during the boost phase will be greatly aided by the hot flame from the boosters engines; detecting colder warheads and decoys against the cold background of space can also be facilitated by advances in sensor technology and computer software.

INTERCEPTION AND DESTRUCTION

For intercepting and finally destroying two types of weapons are being considered -

- a. Directed energy weapons
- b. Kinetic energy weapons

BATTLE MANAGEMENT

Developing a fault tolerant system will require high performance computers, computer software, adaptable communication network for beyond present capability. The system must keep track of all tens of thousands of objects and deliver defense weapons appropriately. A network of space based computers, capable of performing millions of operations per second, surviving virtually maintenance free for years in deep space, and able to adapt gracefully to failures within the network, is just one of challenges facing a multi- defense system.

SURVIVABILITY

A defense system should be able to survive a direct attack and continue to work effectively even if degraded. Applying such a system in a cost effective way to future defenses will be difficult.

Developing a multimegawatt space based electrical power supply nuclear and non nuclear for weapons sensors, computers etc; developing a heavy lift space launchers capable of carrying a hundred tons or more - rather than the space shuttle capability of 20-30 tonnes are some of the other challenges.

Keeping in view of these technical hinderances, which was a far cry still, first phase of S.D.I. was decided to be on research. If things worked out encouragingly the second phase would focus on systems developments, when prototypes of actual defense components will be designed, built and tested. The final phase would be of actual deployment.

We notice that the second phase of S.D.I. is dependent upon the successes in the first phase, i.e. R&D. Now the question is whether the American people support such a programme which involves huge, investment without any assured promise of returns. This is another challenge

to Reagan and his Coterie who dream of an impenetrable defence system against ballistic missile.

Proponents of S.D.I. contends that U.S. must strive to move away from deterrence towards protection by complete nation wide defense. Probably they don't realize the potential danger inherent in moving from MAD to MAS. Once deterrence, which had been a guarantor against a nuclear war, is done away with, the probability of an all out nuclear war rises as both the sides would find itself secure and would find it advantageous to strike first. Moreover the actual working of a defense system could only be tested in a actual war situation and if any one of the "push buttons" technology fails, it would mean end of the mankind. This point has been elaborately dealt in the first chapter.

Moreover the advocated of S.D.I. says and had even a partial defense would be able to reinforce deterrence, U.S. technological and economic advantages should be exploited for strength. Moreover they are of the view that U.S.S.R. already has some secret programme of this kind and U.S.A. should not lag behind.

There is opposition to S.D.I. too. The opponents contend that goal of an impenetrable defense is illusory

given the technical hindrances. A space based defense is highly vulnerable. Secondly Soviet can respond to the defense system with relatively low cost i.e. shortening launch time for missiles, increased number of missiles and decoys. The cost of S.D.I. is staggering and result unpredictable. Lastly the opponents hold that strategic defences will only succeed if offensive forces are greatly reduced and constrained, yet if S.D.I. is pursued unilaterally it would force close the possibility of negotiating joint reductions in nuclear arms.

Strategic defense, of which SDI is a part, is considered to detablize the existing equation between the superpowers in the field of armaments. Deterrence will be undermined and a whole new chain of armament may result. Before going into the question of how SDI will have a destabilizing effect let us see what do we mean by "stability".

If a weapon system is stabilizing it reduces the probability of a war. In theory, the concept of stability is understood to involve incentives and disincentives to use strategic nuclear weapons, or to take provocative actions that might lead to the use of those weapons. It refers to the condition which minimizes

the probability of a nuclear war or the highly provocative behaviour that might lead to nuclear war.

There are three separate types of instability charges levelled against SDI (on any BMD deployment) we shall deal with them one by one.

The first is that of CRISIS INSTABILITY. US BMD deployment would cause Soviet to question its own deterrent capability. In a military crisis Soviet, unsure of its deterrent effect, in anticipation might decide to beat the U.S. to the punch so that Soviet forces could not be destroyed on the ground. Crisis instability can be described as "use them" before "losing them".

Strobe Talbott, a noted commentator on arms control notes "a corollary to the dogma of" offence dominated" deterrence is that there is nothing more provoking and destabilizing than strategic defence... Nixon was aware of the paradox that Reagan has over looked: one side quest for safety can heighten the other side insecurity".¹³

Moreover, a leaky defence provides more incentive for first attack to the adversary. In a crisis situation Soviet Union might presume that US would be under pressure to strike first because leaky defenses might only defend

American cities effectively against an enfeebled Soviet nuclear capability. Thus U.S. first strike would reduce Soviet offensive capabilities where a "leaky" US defenses could handle the remaining Soviet forces. Hence Soviet would have the incentive to strike first.

The second kind is that of Transition stability. Effective defense cannot be operationalized overnight and in the transition period the defense is bound to be leaky.

James Woolsey, member of the President's Commission on Strategic forces enlightens us on this problem

... I have similar attitude to-wards a space based ballistic missiles defense that I do toward a negotiated world that would be entirely free of nuclear weapons. Both, in a sense, are attractive objectives in a philosophical way, but the whole problem with both is how you would manage a transition, and the transition is not some foot note to the problem".¹⁴

Moreover U.S. defence system might be so threatening to the Soviet leaders, that they would rather accept the risks of attacking the US system than permit it to be fully developed.

Even if the transition phase is managed, there would be instability U.S. and NATO have relied on nuclear threat to deter Soviet conventional attack against Western Europe. If SDI leads to a world where nuclear weapons are made obsolete how could NATO use the threat of nuclear escalation to deter the Soviet from exploiting its advantages in and around Eurasia. Reducing nuclear vulnerability will significantly reduce Soviet inhibitions concerning conventional war against U.S. allies, thereby increasing the probability of conventional war.

Charles Glaser notes the potential problems with effective defense

"... is that they could increase the probability of superpower conventional wars. Today's nuclear forces greatly increase the potential costs of any direct U.S. - Soviet military confrontation. As a result, nuclear weapons increase the risk of starting a conventional war, and therefore contribute to the deterrence of conventional war. Impenetrable defenses would eliminate this contribution".¹⁵

Moreover to intercept an I.C.B.M. at the boost phase, where time is very less, one requires a lot of calculation which is not humanly possible but needs a

computer system. President would be compelled to "pre-delegate" authority to an automatic boost phase intercept system. Hence decision making in the field of nuclear wars would fall in the heads of computers.

Arms control is another important issue related with S.D.I. While Reagan asserts that SDI is supportive to arms control, critics holds contrary opinion.

It is argued that if U.S. deploys BMD, Soviet will build up its offensive weapons in order to penetrate U.S. defences. Moreover BMD would make chances of arms control dim in future. This wisdom, that BMD would destroy prospects of arms control is not new. It was realized in the late 60's and probably this led to ABM treaty in 1972. A critic of SDI had observed.

"A competition in building ABM systems would inevitably instigate an uncontrolled build up in offensive nuclear forces, as each sought to ensure its ability to penetrate its opponent defensive shield."¹⁶

ABM treaty of 1972 was a reflection of the mutual vulnerability approach to deterrence. If abided by, it ensures that there cannot be a ballistic missile defense challenge to the condition of mutual vulnerability.

The treaty as amended in 1974, restricts U.S. and Soviet Union to low levels of BMD deployments. Only a single BMD site is permitted and that site may contain only 100 interceptors, 100 launchers and a few radars.

Article 5 of the treaty prohibits the development, testing, or deployment of mobile, surface, space or sea based BMD components.

We can see that ABM treaty does not allow BMD research. If nationwide BMD is to be installed as is being envisaged in SDI programme, the treaty stands abrogated or atleast re-interpreted.

The proponents of S.D.I. argue for reviewing the ABM treaty because of changed conditions.

America accuses Soviet Union of violating the ABM treaty. Moreover according to U.S., ABM treaty has not been able to fulfill its basic objectives. By signing ABM treaty U.S. hoped that there would be no incentive for Soviet to built up their offensive weapons in quantity or quality. Moreover, since the year 1972, when the ABM was signed, America alleges that the Soviets have increased their strategic forces, hence nullifying the spirit of ABM treaty. The entire rationale for the ABM treaty, as

developed during the negotiations and presented to the Congress, has been undercut by failure of SALT-I to limit offensive forces.

Another area where Soviet is accused of violation of ABM treaty is the development of Krasnoyarsk BMD radar.

The Americans under the pretext of the above mentioned reasons acquit themselves of any obligations to follow the ABM treaty. U.S. desires to review the whole treaty in the light of "new development" and probably to suit its convenience of going ahead with BMD.

John Pike addressing a convergence and maintained.

"Given the historical relation between offense and defense, given the historically observed pattern that reactions to strategic defense capability have been the main cause of the escalation of the offensive arms race and given the difficulty of imagining any regime in which we could successfully combine offensive and defensive capabilities, I must conclude that SDI and arms control are fundamentally incompatible."¹⁷

Charles Krauthammer argues that a strategic defense system not only would not work but also would not work but also would present "an exceedingly bad risk.

A defense against ballistic missiles would have to be multilayered and highly effective at each stage (especially the boost phase). Each level would have to have sophisticated detection, tracking and kill mechanism, none of which could be fully tested before an actual conflict. "Given all known technology its practically undoable."¹⁸

Fred S. Hoffman too talks of SDI as a high risk venture and expresses doubts over the feasibility that it will provide absolute defense. He says "Defences are therefore unlikely within the foreseeable future to achieve directly the maximal objectives of rendering nuclear weapons obsolete and removing the possibility of massive destruction of innocent civilian".¹⁹

The Geneva Summit and Reykjavik Summit failed to achieve anything because of Reagan's firm decision to continue with the star wars programme. The President did not want to bring SDI on negotiating table. It was only Gorbachev bold initiative which kept aside SDI (for time being) that led to I.M.F. treaty in December 1987 at Washington.

Another aspect which calls for attention is the role of military industrial complex in the whole process.

The military industrial complex of the market world economy firmly believes or wants the people to believe that advancement of socialism can be checked by attaining technological military superiority.

Secondly the purpose of these strategy is to prevent collapse of monetary and commercial system of market economy by pumping the tax payers money into it. The tax payers shall not shell out money unless they are convinced of the cause. The best way to channel the tax payers money to the corporations and their dependants is through defence contracts and arms trade system. To make it work, the "imagined" Soviet threat comes in very handy and is consistently fostered by the "complex". SDI too is a promised bonanza for military - industrial complex and the same anti-Sovietism is being used to justify the \$ 26 bn project. Some figures of the awarded contracts are given below (FY 85 Budget)

	NAME	AMOUNT
1.	Boeing Aerospace	\$ 130.7 Mn
2.	TRW System Groups	\$ 57.4 Mn
3.	Lockheed	\$ 32.9 Mn
4.	Rockwell Satellite	\$ 25.2 Mn
5.	AYCO Everett Research	\$ 24.3 Mn
6.	Teledyne Brown Engn	\$ 20.9 Mn
7.	LTV aerospace and defence	\$ 19.3 Mn

When such a large amount of money is involved in the SDI project the military - industrial complex will do anything in order to fight the peace movements by infiltration, buying off and subversion.

Since the President's March 23, 1983 speech in which he announced his "vision of future", SDI has been embraced by American defense contractors with public praise, some private scepticism and inevitably open arms. Inside the arms industry SDI came to be viewed as the greatest prospect for profit ever.

Alan Benasuli, a financial analyst, said: "Were we to proceed with deployment, it would be the biggest thing this industry has ever had happen to it, by far. It would be greatest thing on earth".²¹

Some SDI proponents from military industrial complex worry that the complex is not counter punching hard enough against sceptics and arms control advocates, such as Union of concerned Scientist and National Campaign to save the ^{ABM} treaty. Philip Buckley of the aerojet expressed his worry over the possibility that the President may trade away space based defence programme during the Geneva meetings with Gorbachev.

Though the industrialists are doubtful over the

technical aspect of the system yet more than 200 industries expressed interest in bidding for the defence department's "architecture study", a rough blueprint for space based defence system. In no uncertain terms we can say that SDI has come as a bonanza for U.S. business.

Before we conclude let us see the recent debate over the deployment of SDI. Gardner, Office Director in the strategic defence initiative organization explains why he thinks SDI deployment is feasible by 1990's. Among developments favouring earlier SDI deployments Gardner lists the successful demonstrations of Air Force Anti Satellite impact on a space craft, using a 30-40 lb homing vehicle, and of intercepts and an expansion of capabilities of control technology systems, and in battle management command and control systems.

The area of greatest challenge in SDI-battle management command and control - looks even more tractable says Gardner, because of advances in computers, software development, and laser communications.²²

Defence Secretary Casper Weinberger told the Congress that the first phase deployment of SDI could take place as early as 1993-94, but that the implementation of the programme under the broad interpretation of the ABM treaty.²³

However, there is a contrary opinion to early deployment. According to leading scientists in Reagan administration budget shifts have slowed research on lasers and particle beams, the centre - piece weapons of President Ronald Reagan's SDI and have upset planning for research, personnel and facilities. This is going to be detrimental for early deployment.²⁴

In a report, American Physical Society said that "even in the best of circumstances a decade or more intensive research" will be required before it will be possible to say whether beam weapons can be a part of a future Strategic Defence Initiative shield. The report cautioned that many key issues remained to be investigated and even in areas where advances are claimed, remains to be demonstrated. The report says

"At present, there is insufficient information to decide whether the required extrapolations can or cannot be achieved".²⁵

Even Edward M. Kennedy (Democrat) declared on April 15, 1987 that he would work for a plank in the 1988 Democratic platform saying that the next President must pledge not to move ahead with early SDI deployment.

Kennedy said deployment of a partial defence would put "enormous pressure" on the Soviets to build more offensive missile and place their own weapons in space. Most dangerous of all, he added, it could tempt each side to launch a pre-emptive attack in the event of a crisis. Kennedy said.

"It is time and there may be very little time left - to call the star warriors' bluff. The next president must pledge not to move ahead with early deployment and I will work to see to it that Democratic Party and the Democratic platform of 1988 will repudiate any such deployment. We cannot and will not nominate a presidential candidate who echoes this Administrations concept of Star Wars".²⁶

Moreover, Soviets cannot be expected to sit back while the Americans go along with their SDI project. USSR has got to counter measures against any threat from outer space, Maj Gen Boris Surikov, the Soviet expert saying that the counter-measures are "effective enough and will be cheaper than SDI - related expenditures"²⁷ In an interview published in the Soviet newspaper Izvestia, Gen Surikov said that the strategic balance between the superpowers would not be upset under any conditions and it was possible to implement an anti SDI programme much

quicker than to develop a large-scale anti-missile defence system.

Some of the measures Soviet Union can adapt is, modification to ICBM launch characteristics such as shortening burn outtimes; changing exhaust plume brightness which would throw off infrared detectors. Reflective or ablative coatings, cooling, aerosol scree, or missile rotation are all anti-laser protective counter measures. Counter to mid-course sensors include metal Chaff, warheads inside metalised reflective ballons, and IR-emitting aerosols to conceal the warheads and decoys from tracking and aiming systems.²⁸

To conclude, one can say that SDI has proved to be a turning point in history of armaments. It has ushered in a new phase in arms race. Though the professed aim of SDI is to protect the American people from nuclear weapons, it will be too naive to believe that the adversary would sit down with folded hands. Soviets definitely will come up with something to country America's SDI. The arms race, of which action-reaction phenomena is an intrinsic part, will continue.

Arms control had received a set back because of SDI, ABM treaty will stand abrogated, the day SDI is

deployed partially, no-matter how broad interpretation the Americans give to the treaty. The Geneva, Iceland meet failed because of SDI. Though recently I.N.F. treaty was signed, it did not make much head way. Even if adhered to, it will reduce the nuclear weapons only by 4% to 5% which is negligible.

With SDI, there has been a change in the strategic thinking. Till now both the superpowers were sure of the fact that once they decide to attack the other the former would get annihilated in the process. There was no advantage in striking first. With BMD each superpower may assume an advantage in striking first and surviving the attack from adversary. The point here is that, one can think of winning a nuclear war if SDI comes true.

Besides, technology is another area where things are nebulous. Still the scientists are not sure whether 100% defence is possible. Anything less than 100% defence cannot guarantee safety to the people. Moreover, actual working of the whole system can be tested only in a real war situation and if any one system fails, it will be a dooms-day for humanity.

Even U.S. allies are not very keen on promised defence by SDI. They have their own reservations and

scepticism. This is discussed in the following chapters.

Recently Michael Dukasis, a presidential candidate, from democratic party, called for CDI (conventional defence initiative) instead of SDI. Let us wait and see whether there is a change in U.S. approach after the Presidential elections, later this year. What is ironical to note is that some democrats have suggested some initial steps towards SDI. They do not yet violate the ABM treaty but they would mean an ultimate break out. Senator Sam Nunn suggested Accident Launch Protection System (ALPS) which would have one hundred ground based interceptors.²⁹ The Navy³⁰ has also shown interest in pursuing the implications of SDI to the sea. This may become more destabilising in terms of a combination of thrust in ASAT and their placement in the Naval arsenals. Even though there are technical uncertainties the Republicans will push the programme.³¹ The Democrats can only go slow with it. They may not be able to oppose it. This is made clear by most of the replies that were given by contending Democratic Party candidates for the Presidency.

The evolution and present status of military programmes for other space in the USA show that the

militarization of outer space is now poised for emplacement of weapon based. On directed energy chemical and particle beams. There are developments in kinetic energy weapons. These new generation of weapons are sought to be channelised in ballistic missile defence (BMD) and anti-satellite (ASAT) offence providing for a first strike capability. The debate in the U.S. Congress in the last five years have shown that the underlying technology of both is the same. This accounts for the U.S. Congress limiting ASAT tests till the Soviet Union maintains its moratorium.

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BRITISH RESPONSE TO SDI

European response to SDI is not a single unified response. Views range from enthusiastic support to strong opposition. The issue in the initial years had remained confined in the Government and strategic professional circles. It did not become a concern to the common man. The majority view of European officials and experts on SDI might be summarized thus that the very concept of SDI is an unwelcome idea as it stands, and an obstacle to progress on nuclear arms control.

Initial publicly voiced doubts and criticisms by European political leaders, however, have gradually given way to public posture of support for a programme of research, combined with continued private expression of doubt and skepticism about the undertaking, and all kind outright opposition to deployment.

Most European leaders learned of the SDI when they read the text of the March 1983 speech. Always inclined to be a little suspicious of U.S. readiness to take its allies concerns sufficiently into account, many Europeans see, in the American failure to consult them in advance, a clear indication that SDI is intended primarily

to defend the U.S. The programme feeds European fear about American tendencies towards unilateralism, if not isolationism.

Europe has relied on the strategy of nuclear deterrence which the President Reagan himself notes, has "succeeded in preventing nuclear war for three decades". Deterrence was being put to re-examination by announcing SDI. In essence, the President appeared to be criticising the strategy that had been the bed rock of European security since the second world war and to be implying that the rationale that the European leaders have espoused in order to defend the INF deployments was immoral and irresponsible. SDI implicitly questioned the value of INF deployment, for which many European leaders were paying a significant domestic political price.

President Reagan's announcement of SDI whose objective as stated is to acquire effective ballistic missiles defences, is one of the difficult defence policy issues the British government has had to grapple with since the second world war. SDI introduced a debate that was shelved at the start of 1970's, because of ABM treaty and ballistic missile defence inherently

seemed to be difficult proposition against a determined enemy.

The popular STAR WARS speech by the American President on March 23rd 1983 came as a surprise to Britain. It was a surprise, because Britain was not consulted on the issue in advance, like all other American allies. Britain being one of the closest west European allies of U.S. since Truman-Churchill cold war days, thought it right to be consulted in advance, before announcement of a BMD programme which had the potential of ushering in a new era in the field of armaments. Ministers and officials were caught off balance and their responses ranged from concern to hostility. The spectrum of response from concern to hostility was also to be seen in the conservative party while outright hostility was seen in the Labour Party. Reagan's vision of comprehensive defence was rejected as impracticable. Britain's preference was for continuing its research on BMD technology rather than the high profile of SDI.

Britain though gave public support to the SDI programme, it was not without reservation and oppositions in private. Britain's objections to SDI can be studied under strategic thinking, arms control, and differences between Foreign and defence ministry.

Deterrence has been one of the cardinal principals of nuclear strategy in Europe. U.K. too relied on Mutual Assured Destruction for its security as the West European nations. Once deterrence was undercut, the West Europeans including U.K. would start questioning the security environment. We noted in the earlier chapter that SDI marks a paradigm shift in strategic regime from MAD to MAS.

The Foreign Secretary, Geoffrey Howe, raised the question about the effect of star wars on the Western alliance policy of nuclear deterrence and possibility that a project of such a magnitude could set off a new and vastly longer arms race. He even compared the star wars programme with France's Maginot line, the vast defensive wall designed before World War II as a means of protecting France against a German invasion. When the test came the line proved to be useless.¹ History has shown that walls, no matter how great, have not been impregnable. Present day missile technology and the earlier day's bombs force have shown their inadequacy.

Besides, Howe highlighting the point, British had its own reason to oppose the end on any undercutting of the deterrence policy. The very concept of impermeable shield seemed to be a impracticable idea to the British

defence and scientific experts and no one could be sure of whether it would work "on the day".

Moreover, even if both sides possessed BMD systems which they felt were impermeable, both would still probably continue to work on offensive system, in case the other should make a break through in offensive technology using ballistic missile or some other means of delivery. The British were concerned at the conventional balance in Europe too. Michael Heseltine, had argued that Western alliance would never be able to rely wholly on conventional forces even to deter a conventional Warsaw pact attack, as the Soviet Union, because of its geographical position, would always want to have more conventional strength. The West, for this reason had to rely on the threat of nuclear escalation.

Arms control was another area where U.K. supported the idea of limiting offensive arms. Geoffrey Howe's Speech in March 1985 stressed or rather reiterated the British stand on arms control. The foreign Secretary noted that "radical cuts in offensive missiles might make the need for active defence superflus".²

This is a clear indication of British support ~~to~~ of arms control measures. On the contrary SDI had the

potential of bringing in a new kind of arms race both in offensive (to dilute the successes of the adversary) as well as in the defensive field. Britain had clearly voiced its support to the ABM treaty of 1972 and described it as "historic".

Britain had expressed active opposition when in Autumn of 1985, some members of Reagan administration sought to redefine the limits of work allowed under the ABM treaty.³ In December, 1985 the British foreign Secretary told a U.S. representative at a NATO ministerial meeting that the ABM treaty should be strengthened and in no way should SDI research be allowed to become a stumbling block.⁴

One really cannot see how SDI can become operational without abrogation of ABM treaty. Even the Americans are convinced of this fact that SDI cannot be operationalized within the given frame work of ABM treaty, hence they have raised the demand for broader interpretation of the treaty in "changed condition". Will Britain, who has till date adhered incessantly to ABM treaty, accept the reinterpretation of the treaty, remains to be seen.

Foreign office and defence department in Britain often did not converge on the issue of supporting SDI programme. The Prime Minister of Britain Maragaret

Thatcher was keen to provide Reagan with tangible backing for his initiative even though the foreign office and the Department of Trade and industry remained uncertain whether proper assurance from Washington has been received.⁵ The British formal public support was also meant to strengthen the hands of Reagan in his diplomacy with Gorbachov at Geneva in 1985 even though at the subterranean level there were differences.

The foreign secretary's speech, in which he emphasized arms control (March 1985) was not appreciated. Neither the Prime Minister nor the Defence Secretary were willing to endorse the speech in public because what Geoffrey ^{HOWE} had said in the speech was interpreted by the press as being hostile to Reagan's SDI programme.

After the signing of memorandum of understanding in 1985, the foreign office saw little gain in foreign policy arena and cautioned Washington. The Defence Ministry seemed less worried and was not in a mood to confront USA. Some in the Defence Ministry felt that Britain might derive important gains from association with the SDI programme. These broad differences helped to explained the changing British policy on SDI.

The public pronouncements of spokesman of the foreign and defence ministries were at variance with those of the Prime Minister. Though this is outside the scope of this study, this however reflects the dimension of decision making process in a cabinet form of government where there is collective responsibility with the Prime Minister being the pivot of the cabinet. How was consensus arrived at in the Cabinet may yet be too early to know. It is doubtless, however, that the Prime Minister's open support to SDI was opposed by the opposition labour party that seemed to have overplayed its cards in suggesting a defence policy that negated the need of nuclear weapons. The irony is that one of the reasons of opposition to SDI in Britain was its own nuclear programme. This combined with the adherence to the doctrine of flexible response created unfavourable conditions for otherwise very brave and laudable efforts of the Labour Party to think of a world without nuclear weapons. This also explains long durations of evolution of the British response to SDI.

Now that we have looked into the areas of U.K. reservation on SDI, let us see the ways and means of British co-operation with USA on SDI Project.

In the spring 1984, British Defence White paper did not even mention SDI, not even a passing reference. On the contrary it emphasized the role of nuclear weapons and a need for a credible deterrence strategy.⁶

Though Britain did not come out with a public statement, internal debates were going on extensively. The Ministry of Defence and the Foreign and Commonwealth office had recognized in 1985 that SDI was an issue of fundamental importance which would not wane away in near future. However no one wanted to commit to any hard and fast position and there was no need for it too.

SDI was to be long term programme and vital decisions on development would not be taken until late 1980's or early 90's. As late as 1985, Strategic Defence Initiative Organization (SDIO) was seen only as an infant organization trying to bring together existing research projects. Nothing operational in the way of BMD, even in part, would be expected for another ten years.

Moreover Britain, despite U.S. SDI and the probable Soviet response, saw no danger to its Trident Missile-System, which it was procuring till at least 21st century. SDI had little popular impact in Britain, and

with its large parliamentary majority, the Government was under no substantial domestic pressure either to support or oppose the programme immediately.

British policy of wait and see was reflected in its rejection of the 60 days limit given by Casper Weinberger, U.S. Secretary of Defence, to publicly declare its policy towards SDI in 1985.

There followed months of negotiations on a participation agreement before Weinberger and Michael Hess^oltine, the Defence Secretary of USA and U.K., initialled a document in late October 1985. Even after the document was signed, the Cabinet asked for further clarifications on technology transfer before actually approving the document. The Prime Minister was keen on agreement being ratified by the Cabinet where as the Defence Secretary seemed to be more inclined to wait in order to secure better terms in terms of technology transfer and contracts. Finally, the participation agreement was given the final shape on 6th of December 1985 on insistence of the British Prime Minister.

Though in the initial stage Britain showed a "no haste policy" or a policy of wait and see, it got convinced after the formation of SDIO under James

Abrahmason, that Reagan's initiative would not wane away in the Pentagon bureaucracy (as it was expecting earlier). It became clearer that Mrs Thatcher will have to adopt a clear cut posture, as Reagan wanted his allies support for his SDI programme. Moreover Britain did not wish to be left on the side lines.

The British position on the question, as it emerged was one of qualified support till March 1985. There was a four point agreement reached between President Reagan and Margaret Thatcher just before Christmas 1984. These four points were -

1. The U.S. and the Western allies, objective is not to achieve superiority, but to maintain balance, taking into account the Soviet development.
2. SDI - related development would, in view of treaty obligations, have to be a matter of negotiations.
3. The overall objective is not to undercut deterrence but rather to enhance it.
4. East-West negotiation should try to achieve security with reduced level of offensive systems on both sides.⁷

These four points were reflective of the mind of British. The first and the second point of the agreement indicated British view that any effective defensive system for Western countries must involve the Soviet and it cannot be had from just acquiring technological superiority. Britain view point of arms control was reflected in the fourth point.

The four point agreement did not restrict American BMD efforts. Mrs Thatcher failure to persuade Reagan to think like here on the issue became clear. However, the "four point "agreement made it clear that United States could not rely on British backing for any effort and proceed full speed towards the deployment of a BMD system.

Geoffrey Howe's, foreign secretary speech in March 1985 was another conditional support to SDI. Howe stressed the value of deterrence yet pointed to the build up Soviet offensive nuclear forces and to the Soviet anti Satellite (ASAT) and BMD programme. The Anti Ballistic Missile treaty of 1972 was described as historic. The Reagan speech of 23rd March 1983 was also described as historic. By describing both the event as historic, Britain was trying to maintain a balance. Once the British

agreed on qualified support for the research programme, it wanted to have a share in SDI research project. Mrs Thatcher informed the Congress of the British interest in research projects when she visited Washington in Feb 1985. A detailed agreement by which Britain became a part in the SDI research project was signed on 6th Dec 1985.

Once Mrs Thatcher made her preferences clear, the Ministry of Defence led the drive for United Kingdom's participation. It was interested in the relevance of SDI research for other military applications rather than for civilian purposes. Laser, tracking, techniques, data processing advances had implications for conventional "SMART" weapons and battle management. British technology base would be expanded by giving United Kingdom scientist a chance to participate in such a programme. There was talk of have Air Defence Initiative (ADI) as a spin off of SDI since Britain had expertise in avionics.

British government was probably aware of the fact that it could not stop British companies seeking and going in the for SDI contracts on their own initiative. Hence to avoid it, Government decided to act as a conduit through which contract would flow. This would help in two ways. The British Government could keep an eye and

be informed of the going on and moreover it can protect the interest of the British companies.

The research institutues of Britain infact had something to offer to the SDI. The areas where British could contribute were, rail gun technology, computer software, optical computers, artificial intelligence and conventional missiles.⁸

Another consideration for participation in the project was that the conservative Government would gain politically if people mere convinced of the fact that U.S. research money was being drawn to provide jobs to the Britain. The Defense Secretary Heseltine made it clear in the beginning that the British Government was not willing to put its own fund into SDI research, but asked for an American guarantee that British institutions would get contracts worth \$1.5 billion out of the total budgeted \$26 billion for SDI programme.⁹

However United States was in no mood to give such a guarantee of assured contracts worth \$1.5 b but Britain still retained the bargaining chip. There were certain technological areas where America needed Britain. Not only in terms of technology, America needed Britain

political support was very necessary for America to sustain itself with the idea of SDI since France had announced its opposition and FRG was working on the EUREKA and SDI legs.

It has been reported that eighteen areas have been eventually marked out where British expertise have been acknowledged and in these areas British institution can complete on an equal basis with U.S. These areas include lasers and other directed energy weapons; electromagnetic guns, ion sources, optical computers and switches; non electric materials, sensors, radars, interceptors, software security and electronic materials.¹⁰ Though Americans could not assure \$1.5 billion contract; Weinberger assured that Britain would get a significant share of the research programme.

Though other members of the Western alliance were also interested in participation in SDI, British position has been to deal with U.S. on a bilateral basis. There was little effort made by London to secure a common European position. It may also have been calculated by the British that, by being first off the mark it might win some quick contracts from the United States to serve as a demonstration to other allies that SDI participation was worthwhile.

The diluted interest of Britain in the beginning and later signing the Memorandum of understanding can be explained by various considerations. The SDI posed a dilemma and everyone recognized the potential threat it posed to arms control and east west relations. Yet simple opposition seemed to be counterproductive keeping in view Reagan's determination to go ahead with the project.

As already mentioned British participation in SDI project was not immediate. Britain's Department of Trade and Industry was said to be objecting to certain provisions of the Agreement, including property rights to certain technology during participation in SDI.¹¹ However, despite all objections Britain decided to go in for SDI.

Now the question that arises is, what will be the fate of SDI in so far as Britain is concerned if there is a change in the Government. If the Labour party comes to power Britain's policy on SDI is likely to undergo change. In the Labour party, where defense has been a sensitive issue, there has been a little public discussion of SDI. However Neil Kinnock, leader of the opposition party, has made it clear that SDI was a threat to the cohesion of NATO, it was massively expensive and risky, and an

impediment to arms control and disadvantageous to Europe. He said "we in Europe would be caught in an alley between intercontinental defensive and offensive weapons."¹² Denis Healey, another labour leader condemned BMD and claimed that it would undermine the basis of post-1945 stability. Moreover, if the U.S. were to give its BMD technology to Soviet Union, it would make a force of the present Government's policy of maintaining national nuclear deterrent.¹³

A more formal statement of labour party was produced on 11 July 1985, undermining SDI as threatening second strike capability, damaging prospects of arms control. It called for a co-ordinated European rejection of SDI. It voted for strengthening arms control regimes, restricting BMD and ASAT development.

David Owen, leader of Social Democratic Party wrote a letter to the British Prime Minister in which he listed objections to SDI.¹⁴ According to him a impermeable defense system is impossible. SDI would undercut deterrence hence will be destabilizing. Arms race will get a fillip because of reactions from Soviet Union. Resources will be channelled to SDI project unnecessarily which otherwise would be more fruitfully used for conventional defense sector. It will burden the economy.

The SDI, concluded Owen, was an ill thought out, unrealistic and dangerous programme.

Then there were others who felt that designation of SDI purely as a research programme was not very convincing, since political, military and bureaucratic pressure for further effort would have gained irresistible momentum inside the United States by the time 26 \$ billion has been spent. Edward Heath, a former Prime Minister, called SDI "decoupling destabilizing and diversion of resources"¹⁵ Professor Lawrence Freedman a leading intellectual believes that SDI will fade away. Labour's former Defense Secretary, Denis Healey, put it strikingly when he claimed that all the European Governments secretly want the SDI to drop dead.¹⁶ If SDI fades away, Britain would loose little.

Till the year mid 1986, no major contract was awarded to British firm. It was in June 1986, stage was set, for awarding a major contract to the British firm. The Defence Minister, George Younger and Secretary of State, Casper Weinberger met to discuss the range of topics including participation of allies in SDI.

The Pentagon announced in the third week of June 1986, the first major SDI contract to U.K. Officials

said a \$ 10 Mn contract had been awarded to U.K. ministry of defense for study of ways to defend Europe against nuclear missile attack.¹⁷

A second worth \$ 4.3 million was awarded to Culhan Laboratories for research on an ion source and neutralizer. The neutral particle beam is under consideration for the role of discriminating between warheads and decoys.

Two areas where the British have got contract are (1) Architecture studies and (2) Particle beam systems. The money covers twenty months of work and involves a number of unnamed companies.

"Architecture" means specifically battle management command, communication and control work in this areas are already being carried out by NATO Allies as part of a programme to defeat Soviet short range ballistic missile threat. During Congressional testimony in May, SDI Director James Abrahamson said :

"The allies obviously can offer a unique perspective on the shorter range threat and how best to defend against it".¹⁸

Meanwhile, a self described public interest group in London released the results of a survey of British

industrial firms, which indicated widespread interest in SDI, but serious doubts about the extent of possible British participation and profit.

The research group found out the concern among the British industry. U.K. firms poll said that there is a bias towards larger firms in SDI; secondly they worried that their American partners will retain intellectual property rights to any new discoveries, and a doubt was expressed over the fact that many contract will be awarded to British. The British firms also showed anguish over the Pentagon bureaucracy.

Better competition was emphasized by Rear Adm Stuart Platt, U.S. Navy competition advocate general, when he visited U.K. in Jan 1986. British aerospace and defense industry officials were told that U.S. was looking for competitive technology rather than competitive pricing in the early stages of SDI. Platt said :

"We are telling them that if they put their engineers and scientists to work, they all probably have a full plate but if they put the and brochure writers to work, they are likely to wind up with sour grapes".¹⁹

Platt made it clear that in certain areas European technology was better than that of U.S. and hence he openly

offered the Europeans to deliver goods and reap profit.

After signing of the first major contract in June, 1986 U.K. Secretary of State for Defense George Younger was asked as to what happened to the original estimates for SDI spin off to the U.K., which were put as high as \$ 1000 million, Younger pointed out that the programme was, by its nature extremely slow. He said :

"It will be ten years before the true nature of the SDI programme develops and seven months is a short time in the context. Younger claimed that the U.K. contracts are on the course to build up along the lines originally envisaged. But nobody should expect dramatic totals over a short term".²⁰

Reagan demand for \$ 4800 millions for 1987 was already trimmed. A group of congressmen wanted to further trim it by \$ 2000 millions. Any cuts in the U.S. funding of the project will have direct bearing upon its allies participation. This is accepted by Younger, who says he intends to a close ministerial eye on things to ensure progress through the SDI office in London.

Yet another major contract was awarded to British Ministry of Defense in December 1986. Secretary of Defense

Caspar W. Weinberger announced in London a contract award of \$ 8.7 millions to be followed by \$ 1.4 million soon. The total award for Britain exceeded \$ 25 million by the end of 1986.

Four contracts awarded were in the area of -

1. Electromagnetic Railgun - Concept and systems study of electromagnetic railgun weapons for use in missile defense.
2. Counter measures research - Investigation of potential countermeasures and their effect on defensive system options.
3. European test Bed - Examine test bed requirements for theatre defensive options battle management command, control and communications.
4. Battle management/command, control and communications system - Examine concepts and requirements for battle management C³ in theatre defense architecture.²¹ Some of the known contractors of Britain are :

1. Oxford Analytical
2. British Aerospace
3. Ferranti Computer System
4. Hunting Engineering
5. Marconi Space System

6. Ea. sams
7. Scicon Ltd
8. Marconi Rada System Ltd

On one hand we find British Prime Minister getting actively involved in SDI research whereas the head of the British Labour party Niel Kinnock called for removal of all nuclear weapons from Britain and increase conventional stability. Kinnock held that NATO nuclear strategy is fundamentally flawed. To him "limiting" war to Europe using nuclear weapon seemed to be "a fantasy". He said :

"It is impossible to plan on the basis that the Soviet Union would permit a nuclear war to remain limited".²²

Kinnock emphasized the fact that money saved from nuclear weapons should go to enhance British sea, land and air capabilities. Kinnock is also a noted critic of SDI.

The SDI programme has been highly controversial on the university campuses in Britain receiving vociferous criticism on technical and political ground. In summer 1986, 545 university scientist, mainly physicists and computer scientists, including three noble prize winner, signed a pledge that they would refuse any SDI funds, even

in basic science. Even chief scientist in the Ministry of Defence in Britain, Richard Norman, told a House of Committee in 1986 that :

"I am firmly in favour of this research programme while having doubts about the sort of system that might eventually emerge from it"²³

The Government of Britain remain highly sensitive to political implications of SDI. In a hard hitting speech delivered at the Royal United Services institute in London, Foreign Secretary Geoffrey Howe warned that any challenge to the ABM threatened to undermine the "Keystone in the still shaky arch of security"²⁴

The small amount of money so far committed to British research groups reinforce critics argument that the main thrust of the agreement between United States and Britain is political. U.S. may be interested in some highly specialized research in a few esoteri~~c~~ areas, its chief objective is to secure endorsement of SDI's goals.

In May 1987, Ferranti Computer Systems Ltd of U.K. won three new SDI contracts. The new contracts called for Ferrantists lead a study defining the requirements

for a test bed from European part of missile defence. Anti tactical missile defense was an important area of research under Ferranti.

From the various defense contracts awarded to British industries one gets the idea that U.K. industries were satisfied and U.S. was liberal and had lived up to its promise of making SDI a business bonanza for the Britons. However, this is not the case.

In May 1987, by a vote of 229-187, the House of representative approved an amendment proposed by Rep Leo Au Coin to prohibit the award of any future U.S., SDI R&D contract to a company in a foreign country if there is a U.S. company that can competently perform the work at a price equal to or less than the price of the foreign company. A similar proposal was to be introduced by Senator. John Glenn in the Senate.

Au Coin called in legislation "SDI buy America" amendment, charging that the administration is trying to buy support for SDI around the world by awarding contracts and providing jobs overseas. "Any jobs produced by SDI technology and by the SDI research should go to Americans first". was the assertion of Au Coin.²⁵

Rep William Dickinson expressed fear over Au Coin amendment which according to Dickinson had the potential of jeopardizing U.S. relations with its allies. He charged the amendment of undermining the principles of co-operation on SDI established between US and UK in a Memorandum of understanding signed in Dec 1985 which was based on fair and free competition.

On the other hand, we find U.K. too not satisfied with the number of contracts by the House of Commons Select Committees on defense criticized the number and the value of contracts awarded to British universities and industrial firms by US SDI office.

Total value of contract awarded by early 1987 amounted to \$ 34 Mn. Of this amount, about \$20 Mn worth work was negotiated between British and US governments. Only 5% of total value of SDI work awarded to the U.K. was intended to be accomplished by Government establishments, 90% was to be sub contracted to industry or research establishments not associated with the British defence ministry.

When Britain signed MOU in 1985 Michael Helestine, then British defense secretary estimated that Britain would receive \$ 1.5 bn of SDI research work. In June 1986, press

conference in Washington Heseltine's successor, George Younger cautioned that though Britain was "on course" towards that Goal (of getting 1.5 bn research work) but "we should not expect dramatic large dollars totals over the short term."²⁶

Sen San Nunn did not disapprove of the Glenn amendment which was passed by voice vote and restricted foreign participation in SDI. Nunn maintained that he did not "speak vigorously against the Glenn amendment, "because I think there is validity to his assessment that, in effect some of the SDI contracts have been awarded on a political basis for support around the Globe rather than strictly on the basis of merit."²⁷

One finds Britain first vacillating in its support to SDI. Reagan announced SDI programme on March 23, 1983. Memorandum of understanding was signed in Dec 1985 i.e. more than two and a half years after the President's announcement.

One reason for Britain signing the accord could be political imperative. U.S. needed support for its SDI programme. Britain being its ally for long could not have possibly gone against Reagan SDI programme. It

had to take a position as SDI was a very important BMD system to be developed.

However, Britain support came two and a half year later that too with certain qualification. U.K. reiterated its faith in doctrine of deterrence which according to it had been able to maintain stability in the region.

Moreover another reason for U.K. to sign MOU may be economic. It did not want to miss out on the economic future that was promised to them. British Governments aware of the fact that even if it did not agree to participate, it could not have possibly stopped private industries to go in for SDI project. Hence to maintain a regulatory control, it signed MOU hence became a conduit through which the contracts would pass.

Britain was more interested in the defense against tactical nuclear missile as is evident from the nature of contracts it has got. This can be source of doubt whether Britain rally shared Reagan "dream" of a nuclear free world by destroying incoming Soviet missile.

Now there has been a debate over SDI being in contradiction to ABM treaty and Britain supports ABM treaty.

Moreover, economic opportunity for Britain is also on wane. Au Coin amendment in House of representative and Glenn amendment in Senate testified to the fact that U.S. is not in a mood to award further contracts to foreign countries if the country cannot prove itself "more" competent. The whole idea of competency is a very subjective factor which can be used to suit one purpose.

Dissatisfaction has been expressed in the House of Commons by a select Committee that the amount of the contract has not been enough and nowhere near the promised \$ 1.5 bn at the defence Secretary had warned against large expectation.

On the other hand, we see the labour party leader Ninnock assertion that if it comes to power it comes to power it would do away with SDI. He expressed his will against nuclear armaments.

Now the question that remains is how far can political imperative carry Britain to support SDI project or in other words how far can U.S. create new support bases for its SDI project if at all it is carried on with the vigour after President Reagan.

Thus, the British response to SDI raised the question of future strategy since it regarded the new

scheme as strategically destabilizing. This was a legitimate issue since no NATO country wanted a decoupling effect that SDI implied since BMD could be, as it came to be ultimately, only point defence and not even population defence of the U.S.A. How could the Europeans then be defended? There was no prior consultations on this and the USA was attempting a fait accompli for its allies as it reflected in Weinbergers threat following a unilateral announcement. Later, Reagan is on record to have said that even if the allies do not accept it, he would go ahead with it despite their refusal. What option was Britain left with? Long ago De Gaulle had said that British servitude to USA would never make British leaders oppose USA.

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CHAPTER - 4WEST GERMANY RESPONSE TO SDI

Federal Republic of Germany's reaction to Reagan's SDI programme was cautious. Marfred Worner, the minister for Defence held that the ballistic missile defence programme would in no way be detrimental to the problems of security of present or future. While cautiously welcoming the idea of improving the moral position of the West by developing defensive systems, the Defence Minister discussed the significance of the programme by asserting that it would not have any relevance before the 21st century. Government spokesmen Jurgen Sudhoff expressed anxiety about the confusion which could be generated with regard to the defence of Europe if U.S.A. was contemplating to replace intercontinental ballistic missiles by new systems.

The federal Government did not approve the fact of announcement by the President without prior consultation with West Germany. They expected the American President to consult them before announcing the programme which was a major shift in the American strategy. There was considerable amount of scepticism about the technical feasibility of the programme in foreseeable future.

The Social Democrats (SDP), the main opposition party minced no words in being critical to the whole project. The disarmament expert of the party, Egon Bahr expressed the view that SDI could "become extremely divisive between the Europeans and the United States" by appearing to be a plan to build 'Fortrees America'.¹

In 1983, the focus of West German Government and public opinion was on the question of intermediate nuclear forces controversy. The Germans were dismayed over the possible impact of SDI on IMF issue. In June 1983, the parliamentary representative of the co-alition party - the Christian democrat and the Christian socialists and Free democrats adopted a resolution asking the Government to make efforts to keep space free of weapons.

The next phase of W. Germany response reflects a hardened position. In Dec 1983, Genocher the foreign minister cautioned US Secretary of state George Shultz about the threat of an arms race in space. Manfred Wörner, the minister for defence argued that fully defensible shield against nuclear missile is not possible. Even if both the sides developed and deployed partially effective defences, it would have the effect of increasing tension because of the fear that one might develop a

first strike capability with its second strike arsenal partially protected by a BMD shield. The potential fear from each other will lead to an accelerated arms race. He emphasized on the point that SDI endangered the basic principle which kept NATO alliance together, namely the sharing of equal risks in the defence of freedom. The official position of West Germany was to ask United States and Soviet Union to agree to a ban of defensive space based weapons.

The initial reaction of hostility towards SDI could have stemmed from the fact that SDI would die a natural death. But this was not to be. It became clearer to West Germans that SDI would not wane away and Reagan was determined to go ahead with the programme.

Chancellor Helmut Kohl, who was known for his strong pro-American leaning, was not very happy to oppose Reagan's SDI programme, which was a very important issue. Moreover SDI was becoming the focal point for the development of many branches of highly advanced technology and German involvement began to look profitable. In Feb 1984, French President Mitterand proposed a European space community to rival SDI in the development of technology and even produce its own BMD programme. When

Germans comparatively saw the proposals in terms of costs and technology, it concluded that co-operation with U.S.A. was more attractive. Despite U.S.A. more attractive proposal the FRG was still sceptical about the impact of SDI on arms control measures. It supported the idea of establishing a working group to analyse the implications of existing agreements for BMD and space based weapons.

In Summer 1984, the German federal Security Council asserted that despite certain misgivings, FRG should adopt an attitude of co-operation towards SDI. It asserted that since Soviet Union was engaged in advanced BMD technology, United States should continue with research. BMD cannot replace deterrence. If even BMD becomes feasible, Europe should be equally protected which meant the need to develop defences against shorter range systems. Further, the development of BMD must not make Europe safe for conventional war and the effect of SDI on ABM treaty must be given adequate attention. Hence while maintaining a sceptical position, Germany allowed itself enough room for manoeuvre to participate in the research process and reap whatever economic and technological benefit that might come its way.

In Feb 1985, Chancellor Kohl in a speech spoke

about SDI in a positive tone but also indicated the divergence of views between Germany and the American administration. He acknowledged American space programme as an incentive for Soviet Union to negotiate (which was not the primary objective of America). He also warned that the strategic unity of the allies' territory had to be taken into account. Instability especially during transition should be avoided at all cost. Kohl seemed very enthusiastic over the technological gain.

There were certain quarters from where full support was given to strategic defense initiative. Jurgen Todenhofer, the CD4 Bundestag caucus spokesman on arms control and Rai Uwe Von Hassel, the former defense minister declared support to American BMD development. Leader of CSU, Franz Joseph Strauss too supported the SDI programme enthusiastically, among the members of FDP, the other partner in the ruling co-alition has a less favourable attitude to SDI. Hans Dietrich Genscher openly criticized the American project.

The Vice-Chairman of SDP Bundenstag caucus vehemently criticized SDI. Horst Ekhme expressed that, Washington by pursuing of SDI, was undermining the existing security strategy and hence opening up the

question of east-west relationship. He urged U.S. and the Soviet Union to halt the process of research development and testing of high energy and anti satellite weapons.

Even the former West German Chancellor Helmut Schmidt had cautioned an isolated and sole decision to join the American star-wars project, ignoring the European technology co-operation. In a letter to chancellor, Helmut Kohl Schmidt said "the differences in view about the U.S. project ~~that~~ prevail now between Bonn and Paris will further deteriorate the France-German relations". Kohl remarked in an interview that though Bonn was sympathetic towards the French plan of the "European Research Co-ordination agency (Eureka), the issue was still disputed and there was no "full agreement" between Bonn and Paris on the project. Yet the French and West German ministers for science and technology would confer on "Eureka" as an alternative to the SDI and submit a report shortly.²

The CDU/CSU leadership realized that Germany would gain more in technical and economic sphere. Lothar Spaath, one of the leading figures in CDU wrote in Der Spiegel on 11 March 1985.

"Europeans should not yield to the temptation to

enter a controversy about morality and feasibility which in the phase of basic research cannot be finally decided; the United States has started a new round in the technological competition, and unless one is completely wrong about this it will become the decisive test of strength for power and markets tomorrow".³

A fortnight later, Weinberger despatched letter to its allies soliciting their supports and participation in SDI. As in case of all other NATO allies; West Germany too was not happy about the sixty days ultimatum. However, this demand was later withdrawn.

Defence Ministry response to Weinberger proposal was affirmative whereas the foreign ministry response was hesitant. Genscher recognized the obstacles that SDI would become in arms control. He also recognized that the whole east-west relations were being open for never analysis. The potential of SDI of ushering in a new arms race too was recognized. Genscher was also very concerned that no progress was being made in reducing Soviet I.N.F. - against which a SDI shield might not be effecting.⁴

However, given all doubts and opposition on 19th April 1985 Chancellor Kohl gave W.German support for SDI in Bundestag. He said :

"The American research programme is, in our view, justified, politically necessary and in the security interest of the West as a whole". He backed a joint West European approach to participation SDI research, thus hoping to maximize European influence over US decisions about development and strategy. The speech emphasized that SDI had brought the Soviet back to the negotiating table. Usual concern over arms control were also expressed. Kohl's chief concern was that in SDI, research should not become a "technological one-way street" which would benefit only the U.S.⁵

On May 20th 1985, Chancellor Kohl seemed to dilute his endorsement of SDI. He called SDI, a risk as well as an opportunity. In a speech to NATO legislatures in Stuttgart, Kohl said he could not predict whether the programme would prove to be "an alternative means of preventing war and a way to reduce dependence on nuclear weapons" "SDI means opportunity and risks for the NATO alliance at the same time".⁶

In September 1985, Horst Teltschik led a delegation to United States to explore possibilities of German participation. He strongly recommended co-operation of West Germany with United States in the SDI research. Teltschik praised the U.S. programme for having prompted

the latest Soviet proposals for a reduction in offensive missile systems. He said Bonn had serious reservation about research. He said "I have my doubts about whether one can limit research, or whether one should limit research at all. He pointed out that one realm where such limitations might be conceivable would be "field test" in space - West German industry, he said, is particularly interested in an accord with the U.S. to regulate such issues as technology sharing, patents and pricing for Pentagon on contracts.⁷ The Foreign Ministry was very critical of the report. Genscher argued that Teltschik have not been able to extract any safeguards against German co-operation being a technological "one way street" to United States.

By November 1985, the intra co-alition dispute over SDI seemed to escalate. The Chairman of the FDP in Bavaria, Manfred Brunner, called upon the Chancellor to replace Telstchik by an experienced official from the foreign ministry. The basic assumption of West Germany participation i.e. technological gains was also doubted. Heinz Riasen Luber, the research minister doubted the idea that SDI would provide a significant technological push. He held that technological benefits could be better and more cheaply provided by a non military programme.

French proposal of Eureka has a broad support in West Germany. Genscher has been particularly very enthusiastic about Eureka. However France has been disappointed with the small scale financial support pledged to Eureka and failure of the German government to support a number of proposals for joint projects in military and space technology.

On 18th December 1985 Cabinet decided to send Martin Bangemann, the economic minister, to Washington in January to begin negotiations for agreement on a general framework for German participation in the SDI research. The Government declared that it would not itself take a direct role, nor provide any funding for the SDI research.

After the 23rd March 1983 speech of President Reagan in which he outlined "vision of future" which offered hope; there were sceptical notes in West Germany. The statement of Reagan appeared to be nothing less than the abandonment of the concept of mutual assured destruction and nuclear deterrence to be replaced by a total and complete defense against nuclear missiles. Views were expressed for and against Presidents "vision of future" in the West Germany.

However, it is important to note that Bonn never endorsed the fundamental objectives stated in Reagan's speech. This is indicated by the consistent emphasis in all official German statements on the need to observe the ABM treaty to negotiate with Soviet Union about space based weapons, and to achieve a deep cut in offensive nuclear arsenals. The federal Government did not accept that the notion of deterrence through the threat of nuclear retaliation was likely to become obsolete in a foreseeable future. It has been emphasized time and again that doctrine of nuclear deterrence must continue as the foundation of western society.

United States interest in BMD stemmed out of various factors, a general disillusionment with arms control process was one of the factor Richard Perle, one of the spokesman of Reagan administration pointed out the failure to restrain the growth of the superpowers nuclear arsenals particularly Soviets - which had resulted in U.S. strategic inferiority. The Reagan administration was critical of the process of the detente and rejected many of the basic assumptions. In the Republican circle there was a growing feeling that what was really need to keep the Soviet Union at bay was a return to American strategic superiority, since as a result of strategic

nuclear parity the credibility of the Americans threat to use nuclear weapons in response to limited Soviet aggression had substantially declined. Lawrence Freedman says :

"In a sense, ABM represents the last best hope of a real strategic superiority. It is a measure of the desperation of these seeking such a superiority that they are still attempting to revive an option that requires enormous economic and scientific investment, that is severely restricted by international treaty and that has always suffered in practice from the inherent advantages occurring to the offence in nuclear warfare.⁸

Another major concern of the Pentagon Strategist was the problem of the vulnerability of the intercontinental ballistic missiles (I.C.B.M.). A substantial growth of the Soviet counterforce capability began to be seen as a real threat. Americans believed Soviets are going ahead with BMD research and they might get a break through which meant abrogation of ABM treaty.⁹

Europeans, without exception of Germany, did not share widely the American strategic concerns. I.C.B.M. vulnerability was only seen as an issue if it was necessary to have and be able to preserve a counterforce capability -

and this was assuming that a Soviet first strike scenario to knock out the American ICBM force had some degree of plausibility, which was not accepted either. Development of counterforce capability of both Soviet and USA was viewed with suspicion in Europe. Mutual assured destruction did not require counterforce capability but merely the ability to inflict totally unacceptable damage on the enemy. Apprehension were expressed in Europe over American nuclear war fighting strategies and talk about "prevailing" in a nuclear war.

Hence Germany did not exactly share the strategic concerns of the Americans. The point where the Federal Government took American anxieties more seriously was Soviet research into BMD systems. Government statements in the Bundestag affirmed that the American research programme was justified because of the Soviet research, but that the way to deal with this situation was through arms control.

West Germany's overriding concern is to secure American nuclear guarantee which means maintenance of the strategy of flexible response supported by the American commitment to a full scale strategic nuclear exchange as the upper limit of escalation.

Developments in BMD represents potential threats

to West Germany Security interests. Even if Reagans dream of making nuclear weapons obsolete were to be realized, West Germany would not necessarily feel secure, because of its reliance on theatre nuclear weapons backed by the threat of the strategic arsenals to deter a Soviet conventional threat. Bonn, like other European countries is fearful of the fact that if total BMD system is deployed by both sides i.e. USA and USSR, Europe will become safe for conventional war and Europe holds that USSR and its east European allies is far ahead of it in conventional weapons.

Another likelier possibility is that one of the superpowers will achieve partial but substantial BMD capability. This can cause strategic instability, leading the other side to attempt to Saturate the defense system by an increase in offence system, and/or a BMD arms race. The transition from offence to defence system seems to be very unstable.

Participation of Europe in SDI programme depends upon the extent to which protection could be extended to Europe. Official German statesman have continuously maintained that the fruits of American SDI efforts must be extended to Europe. The possibility of the United States and the Soviet Union acquiring a protection not enjoyed by

Western Europe has stirred up anxieties right across the political spectrum.

In fact West German Defence minister Manfred Woerner pushed an idea of a ground based European missile defence system, perhaps aided by satellites, for defending Europe against intermediate conventional and short range missiles, as an adjunct to SDI. Concerned about the development of a Soviet conventional first-strike capability against Europe, in contrast to a Soviet nuclear first strike capability, such as SS-20 and other ballistic and cruise missiles now deployed by the Soviets against western Europe, Woerner said there is a lack of technology and resources in Europe to plan a space-based system.

He said the advent of a Soviet conventional first strike capability awaits only the attainment of the increased missile accuracy and pay load, allowing the Soviet missiles to be used against Western European airfields, air bases, command and control centres and storage areas.¹⁰

West Germany had supported EUREKA which again is a reflection of its concern to have a European defense system. Hans Dietrich, the West German foreign minister said at a meeting of 18 west European Countries on Nov 6 1985

"All agreed the conference was a success. The decisions reached gave EUREKA structure and stature. It is clear that all participants are ready to help their economies, industries and research institutions become technologically more competitive with the United States and Japan.¹¹

West Germany along with Britain agreed to provide Government funds to support research projects being established under EUREKA Chancellor Helmut Kohl asserted that EUREKA was viewed by many delegates from the participating Governments (in the conference) as a significant new commitment. Bonn described it as an "encouraging step" and committed to contribute to the project but failed to specify the amount.¹²

Members of the SDP expressed the fear that with the creation of "Fortress America" it would be possible for the United States to pursue a strategy of a nuclear war in Europe. US may follow a more adventurous foreign policy in general, particularly in the third world. Likewise, if Soviets developed a substantial BMD capability it too might be more willing to engage in military adventures which may include conventional war in Europe. In this case, the possibility of relying on flexible response doctrine might fail.

SDI, had an impact upon West European security collaboration i.e. among themselves. France relation with Germany was effected. French President Mitterand policy called upon Germany to expand military co-operation and the Germans responded. As Germany is not allowed to possess nuclear weapons of its own, closer co-operation with France was the most plausible alternative. Apart from setting up interministerial mechanisms for direct bilateral co-operation, the French initiated the revitalizing of the West European Union as a vehicle to expand their defence co-operation with West Germany so as to include other European nations.

The way SDI was received by West European countries initially was not negative in terms of West European security collaboration. The response was marked by universal scepticism. However, divergent views evolved as the question of participation came up. The French took a very different view than Germany because of their insistence on developing their deterrent technology independently.

When in March 1985, Weinberger called West Europe to Participate, a co-ordinated European response could not evolve. Britain took a supportive stand. It rejected the WEU as an appropriate forum to discuss and

co-ordinate the political and strategic aspect of SDI as they would effect Europe. British reasons for supportive stand has been adequately dealt in the previous chapter. The French saw the USA invitation as a political ploy to obtain European support for SDI, hence rejected the offer. West Germany expressed qualified support.

There has been a talk going on in Europe about technology gap. In information technology and manufacture of computers, integrated circuits and microchips, Europe is a generation behind Japan and United States. Laser and biotechnology are two other fields where Europe is far ahead. Moreover, Lothar Spath has pointed out that Europe lacks an efficient research infrastructure to catch up. In these conditions SDI posed a threat and an opportunity. Threat in the sense that U.S. was making another great leap which would further push back the Europeans and opportunity in the sense that if European participate in SDI research, they possibly would gain and hence reduce the technology gap.

West Germany, Ministry of Defence, has already identified the areas where it could contribute much before Weinberger letter in March 1985. The internal report of the planning staff identified eleven technological

areas of importance for space based BMD. In the fields of optical sensors, mirrors and reflectors, high frequency technology for radar and signal processing were some of fields where West Germany was in a very good position.

American should reciprocate West German contribution with technology areas where Germany is logging behind. However, institution and political difficulties are involved in this kind of reciprocal equation. Since the beginning of early 1980's, the U.S. Department of Defence has pursued a very strict policy with regard to technology transfer the reason being that to prevent USSR from having access to the American technology via a third country. An added reason to such controls has been the experience with Japan's semi-conductor industry, which initially has been aided by America but later out-produced American industry. There is a possibility that SDI research will be classified secret and hence will not be available to Europe for civil industry.

The Teltschik mission in Sept 1985 purpose was to establish a reciprocal transfer of American technology to West Germany in return to its contribution towards SDI research programme. Teltschik, foreign aide of Kohl, came back with optimistic glow but later when the report was circulated among the various ministries, Foreign Ministry

concluded that Teltschik had failed to obtain the necessary guarantees. Not only would U.S. not give Germany access to its technology, but all the results of German research taking place under an American contract-research dossiers, data, software, and so on, would be entirely at the disposal of the American Government alone. There was no guarantee that German efforts to exploit the fruits of joint research would not fall foul of American secrecy laws. Teltschik was accused of relying on the vague undertakings of the SDIO Director, James Abrahamson, who simply did not possess sufficient authority to give the kind of binding guarantees that West Germany required.¹³ Horst Fischer, an eminent person in international law, pointed out that Article XI of the ABM treaty prohibits the transfer of ABM technology to a third country. This clause can restrict USA to share its technology with West Germany.

However, despite all these problems Bonn decided to open negotiations with United States on the condition for exchange of scientific research and technology in connection with the SDI programme. Such support at present is only for SDI research and its declared objective is to strengthen the hands of U.S. in arms control negotiations.

By the end of the year 1985, there were speculations of West German participation in SDI. The economic minister of Germany Mr. Martin Bangemann was being tipped to lead a delegation to U.S. for signing an agreement with US. Germany primary interest lied in the "fair access" to commercial spin-offs resulting from SDI research. Unlike U.K., Bonn is not seeking a fixed financial share but only "ways to facilitate" German companies obtaining contracts.¹⁴

German cabinet gave a cautious approval for Bonn participation in SDI. The Government reiterated its political but not financial support. The individual companies were left to compete for contracts on their own merit. However, here also Genscher observed that any contracts awarded to German industry would be so small that no real benefits will accure.

Before the delegation departure to U.S. to sign Memorandum of Understanding, Kohl met Worner, Bangemann and foreign minister Hans Dietrich Genscher to discuss the State of negotiations. They were in agreement that there should be no secret military agreement as had been proposed by the Pentagon. In addition, it was agreed that a clause covering inclusion of West-Berlin based companies should be included in the agreement. Progress has been made with respect to technology transfer and the

German demand that expertise gained by German companies and research institutions by virtue of their SDI participation must be freely available for military and/or civilian applications outside the SDI programme.

With respect to the U.S. demand that Germany set up an SDI contract group in the defence ministry as an intermediary between German industry and the Pentagon and other U.S. institutions, the sources indicated a two pronged approach. In order to avoid the impression that the framework agreement was a purely military affair, a contract office would be set up close to economic ministry. At the same time, a German SDI office would be created in the Defence Ministry to review strategic, military and technological aspects of SDI. The modus-operandi of these two groups were unclear.¹⁵

Secretary of Defense Mr. Caspar Weinberger and West German Minister of economics Martin Bangemann signed two documents in April 1986 outlining participation of West Germany in SDI programme. The German Press claimed that the negotiations leading to signing of agreements were not "difficult or tense".¹⁶

The first part of the agreement was a Memorandum of understanding under which the West German Government

research establishment, industry and other entities would be invited to bid on the contracts. The second document was arrangements for technology sharing and protection of that technology for Soviet or its allies espionage.

The later part of the agreement came at the suggestion of the West Germans because of the "Political climate" in which some segments of the Government had openly opposed the accord and because of U.S. concern over the success of Soviet spying operation in the Bonn Government. The agreement did not include any funding.

American and West German leaders in bilateral and NATO meetings appeared to agree that US SDI programme would adequately take into consideration the threat of Soviet short and medium range tactical missiles to Europe and conduct research specifically oriented to this menace as well as defending the U.S. against strategic weapons. As a result of this tacit agreement West German Defence Minister Manfred Worner appeared to have set aside or de-emphasized his suggestion that Europe consider a separate land-based defence system, against both nuclear and conventional attacks.

Woerner and his Chief of Staff, Inspector General Walfgang Altenberg asserted that German diplomatic efforts had succeeded in convincing the Americans to upgrade the

importance they attached to the tactical threat to U.S. allies. Gen Altenberg said "It's not good value to spend one mark twice to address the same problem. It makes no sense to conduct our own research."¹⁷

Due to insistence of Germany and other West European powers on anti-tactical missile defence system, DOD Under Secretary Dr. Fred Ikle said on May 22, 1986 that NATO countries will be offered technology from SDI efforts to augment their tactical defense. He noted that U.S. army has initiated an anti tactical missile programme involving efforts to upgrade PATRIOT and Hawk (Air defence missiles). Lt Gen Abrahamson said "Our allies obviously can offer a unique perspective on the shorter range threat and how best to defend against it" and "th Allied architecture studies will provide the SDIO with a better understanding of the requirement for a credible, robust defence - a defence which is developed in an ordinary manner, and capital on the evaluation of those who confront directly the shorter range threat". "Defence of the allies" says Abrahamson "has been a part of SDI's global architecture studies".¹⁸

The Strategic Defence Initiative Organization issued Messer schmitt - BOEL KOW - BLOHM its expected infrared Background signature survey contract on July 11,

1986, SDIO's first to a German company MBB will complete the preliminary design of IBSS experiment by October at a fixed price of \$ 4 million.

Note of dissent among scientists in West Germany also began to be heard. Over 1000 West German scientists in Eden Wurtemberg state made public their refusal to take part in US strategic Defence Initiative programme on the ground that it will usher in an armament race in space. The scientists announced their decisions in a petition submitted to minister, President to Lothar Spah of the state Government.¹⁹

Another major contract awarded to MBB was in March 1987. Pentagon exercised a \$ 28 bn contract option with MBB for phase II manufacture of the elements of a space based infrared Background signature Survey (IBSS) experiment. The IBSS is a part of the SDI tracking and pointing project which was planned for a future space shuttle mission.²⁰

West German response should be seen in the context of US-German and French-German relations. Since West Germany, like other European countries developed under American aid and since the strategy of flexible response provided nuclear deterrence to Europe and met special security concerns of FRG being a frontline state, it

could neither accept strategic decoupling nor enhanced dangers of conventional war. This goes a long way in explaining its initial caution reaction to SDI. The INF and SRNF treaty has to be seen as a follow up of its position on SDI.

Second, this caution was further strengthened by the fact that owing to De Gaulle - Adenauer understanding the two erstwhile sworn enemies had become friends. France had announced EUREKA as an expression on non military. European thrust into space. FRG could not have taken a hostile position to this.

Third, despite the fact that in certain areas FRG had developed its S&T, it visualized that S&T spin offs may be attractive, in civilian industry and hence was willing to join the larger programme of SDI and provide humble support to EUREKA.

Fourth, an all out opposition to SDI may not have been a very practicable policy since the U.S. might have engaged in entering the private West German firms into (a) contracts and (b) put pressure on the government for support as they did in case of France.

Fifthly, politically, since FRG had a conservative leadership its response, like that of Britain and Prime

Minister Chirac was to provide for diplomatic support to Reagan in his negotiations at Geneva and subsequent Summits with Gorbachev of the Soviet Union.

Sixthly, the FRG shared the view both of the European Govts and opposition left parties in England and FRG and ruling socialist party in France that nuclear deterrence cannot be replaced and that there needs to be an interim strategic regime.

To conclude one may say that West Germany too did not fully approve of the idea of SDI. It did not like the way the programme was announced i.e. without any consultation. The defence minister saw SDI as an potential fuel to inflame the arms race. However despite notes of dissent and hesitation the Germans decided to jump into the fray. What guided their decision was not the idea of defence against nuclear missile (which was the professed aim of SDI) but technological gains and profits. Kohl had referred to SDI as an "opportunity" as well as a risk. As other West European countries West Germany too is concerned more with short range threat rather than a foolproof umbrella. Patriot (Air defence missiles) are higher on West German priority list. Future West German support to SDI depends much upon how much U.S. is able to converge his idea of a comprehensive defence and

West European view of defence against short and medium range missiles. Civilian spin offs of SDI will also determine German support.

However, there are problems cropping up. Reagan's budget for SDI had been under severe criticism. Moreover, too many foreign collaborations are not being appreciated by the Americans. And most important question i.e. of technical feasibility of SDI still remains a "million dollar question".

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FRENCH RESPONSE TO SDI

The French official response to SDI has been in the negative. But there are some political and industrial voices in France saying "Yes". Initial response to Reagan's speech (March 1983) was described by one French official as a mixture of scepticism, bewilderment and a mild dose of embarrassment.

Scepticism, because of doubts about the technological and financial soundness of President's vision, concern about the wisdom of calling into question the existing strategic nuclear regime and because of improbable utility of the new defensive system. Bewilderment because of lack of prior consultation with allies and subsequent incoherent replies from the American bureaucracies. Embarrassment because of the naive assumption that the allies would see the benefits of defending America against nuclear missiles in much the same way as Americans.

President Francois Mitterand's speech in UN General assembly in Sept 1983 was the first official response to SDI. President proposed a dialogue between the five known nuclear weapon powers. This discussion

was proposed in sequel to (1) the superpowers reducing their arsenals significantly (2) Imbalance in European conventional force level must be reduced (3) Chemical and biological weapons must be barred from production. The speech of the president emphasized that space was the common heritage of humanity and hence should not become a field of antagonism.

Speaking at the Hague in Feb 1984, M. Mitterand proposed greater efforts within the European community in industrial, technological and social areas. He said

"We must look beyond the nuclear realm if we wish not to fall behind with regard to a future, closer than is generally believed. Europe should be capable of launching a manned space station, which will allow us to observe to transmit, and thus to take action against any menace - then Europe will have taken a big step towards its own defense. A European space community would be to my thinking the most appropriate response to the military realities of tomorrow".¹

President Mitterand criticised President Reagan for "overarming" with SDI programme "I view President's Reagan position, which consist of putting a sort of shield the length of the United States to prevent missiles from

entering, as overarming" Mitterand said "This is not the direction one must follow but rather the opposite, towards disarmament". He favoured construction of a manned space station "But as far the militarization of space, no. It is better to begin a dialogue between the two superpowers". He said he would like for France to have better relations with the Soviet Union, "but not to the detriment of security and provided they have the respect for us that we deserve".²

In Jan 1985, George Shultz and Andrei Gromyko, the US and the Soviet ministers met in Geneva to explore the basis for further arms control talks, which was to include SDI. Paul Nitze and Robert Mac Farlane, the two American emissary went to Paris after the Geneva summit to explain the results. Their version of the official U.S. position was pleasing. U.S. had taken the position that (1) independence of French nuclear forces should be maintained. (2) Importance of deterrence was emphasized" until at least till the end of the 20th (3) Refusal to include French and British nuclear arsenals in the superpower negotiations.

France seemed to be satisfied with the Geneva meeting of the superpowers. This could be observed from a radio interview given by M. Hubert Vedrine, Diplomatic

councillor to President Mitterant in Jan 1985. M. Vedrine repeated the well known French criticism of the SDI, but without the hostility and ridicule of the previous remarks. He also removed what had seemed an inconsistency in French concerns; having concluded that a leakproof defence was impossible, France could not fear for future of its own "anti-cities" strategy, since cities would always be accessible to a sufficiently dense or sophisticated attack. Further, an analysis of American strategy by French Government analyst had re-assured Paris that even United States apparently still saw value in continuing to buy these very nuclear forces that would no longer be useful in a defence dominated world.³

President Mitterand in a press conference on May 4, 1985 clearly said that France was not ready to co-operate in SDI efforts in its "present form". Hence France became the first country to reject the role in SDI project.

More than any other allied leader Mitterand has expressed scepticism that the U.S. would ever share all research findings with its allies. He also voiced deep concern that the U.S. research programme into space-based defence could jeopardise the concept of nuclear deterrence. Mitterand said Reagan used the term

subcontractors in referring to Europe's role in the US project conforming the misgiving that European countries would not be treated as equal partners with the U.S.

Mitterand said "Sub contractors, "That's the word I heard The word was said in English. It confirmed my intuition. The technology interests me, but the strategic project is interesting only for the future when man becomes master of space, I told Reagan France would not participate.⁴

In rejecting a role in the U.S. scheme, President Mitterand suggested that the US and French project "could be bridges" once the specific outlines of the two research programme were known." The other research programme Mitterand was referring to was EUREKA. He suggested that both cannot be said to be incompatible and was ready to have exchanges with United States. The French proposed programme was primarily to explore space through advanced research in order to master new technologies.

Mitterand reportedly made it clear to President Reagan that though France was highly interested in the technology aspect of the SDI project but cannot agree with the strategic aspect of the U.S. programme. This position was taken by France because in its view, the U.S. programme

had the potential to alter the concept of mutual assured destruction, that has maintained peace in Europe for more than forty years. The French revelation came as a startling development in an economic conference that earlier had avoided discussion of the space defense research programme.

Before the leaders of the industrialized country met in Bonn in May 85, differences of opinion over SDI loomed large on the horizon. So wide were the differences that no mention of the project was made in the final communique of the conference.⁵

France, being confident of the fact that London and Bonn shared the same political criticism about SDI, began to be more concerned about technological, scientific and economic threat posed by the American research programme. Proposals of U.S.A. to co-operate in their programme was seen with scepticism in France and it wanted U.K. and F.R.G. to be cautious of the "crumbs" to be gathered as a result of co-operation.

Before joint Europe reflection on the issue, Defence Secretary Caspar Weinberger on March 26, 1985 asked NATO defence ministers to indicate within 60 days whether

their countries are interested in collaborating with U.S. in SDI research. In letters to colleagues attending a NATO meeting at Luxembourg, Weinberger asked interested defence ministers to describe "the areas of your country's research excellence that you deem most promising for this programme". He offered to arrange detailed SDI briefing in Washington for scientists and engineers from interested countries.⁶

However, Weinberger was soon obliged to make it clear that 60 days should not be considered as an ultimatum, and it was explained later that the Pentagon wished to deal bilaterally with individual government as well as firms and not with common European position.

Reagan administration wanted joint declaration of its major allies, (France in one of them) supporting SDI at annual economic summit in May 1985. Sources revealed that U.S. wanted such a declaration to further pressurize Soviet Union to get down to "meaningful negotiations" at nuclear arms talks in Geneva. In return of such support Reagan promised a policy of research co-operation and access to high technology involved in the multi-billion dollar missile defence programme. There was a marked reluctance, particularly on the part

of France, to participate in a joint policy declaration.⁷

A report prepared by U.S. Library of Congress titled "The Strategic Defence initiative and United States alliance strategy" observed that the allies are uncertain over the fact whether strategic defence would protect them, given their proximity to the Warsaw pact and its manned bombers. About France it said that French foreign Ministry officials scoffed at the idea that an antitactical missile could be spun off from the SDI programme and extended to Europe, and added that the financial costs to the Europeans of any such system could be overwhelming.⁸

Not even a month had passed of Weinberger letter, the French came up with their programme "EUREKA". It thought that it had come up with an appropriate response to the American invitation or rather challenge, EUREKA is a near acronym for European Research Co-ordination agency. It took some time as to decide what the agency would do and with whom. But at the outset it became clear the Paris wanted to raise European consciousness about the "take-over bid" that the American offer, on SDI represented for Europe's best scientific and industrial talent. The list of interest area selected for EUREKA closely resembles the fundamental research objectives of

SDI: optical electronics; laser and particle beams; high speed micro-electronics; super computers; artificial intelligence were some of the field initially marked out for the programme.

The origins of the EUREKA initiative were made clear in a report on European SDI collaboration prepared by the forecasting and analysis centre of the Ministry of External relations. The report was critical of the argument that participation in SDI would be effective way to meet the technological challenge posed by the American programme. The report pointed out that SDI research would primarily be military in nature, with little immediate civilian application and this was in addition to the dual problem of America's obsession with technology transfer and the need to protect work labelled, industrial defense secret. Further more the report emphasized that, it would make sense for the SDIO to seek co-operation of Europeans only in areas where Europe already has a lead; yet the areas of SDI work - lasers, micro-computers, space - are exactly those areas where Americans predominance is overwhelming. Conclusion is obvious - Europe must possess its own high technology project capable of mibilizing the energies of its scientists and industrialists. EUREKA main objective

was to use European scientist and technology for Europe. From its birth, it was testified to be as close as possible to civilian market.

The French President urged the European countries to rally behind EUREKA because of the need to preserve their fund of intelligence, technology and brains. The European countries reacted to French proposal differently.

Chancellor Helmut Kohl justified US programme on the ground that Soviets too had been conducting its own space defense programme. It also, agreed to cooperate if given adequate assurances. Kohl kept his possibility of participating in the French initiative either as an alternative or an adjunct to a role in the U.S. programme.

Britain chose to join US research programme and even voiced some disdain for the French project.

Italy and Netherland had shown some interest in EUREKA as a way to strengthen European unit and enhance the European community's ability to compete with U.S. and Japan in new technologies. But EUREKA's high cost frightened away most European Governments, who have been pushed by private industry not miss out on the chance for lucrative contracts funded by Washington.⁹

However EUREKA, once announced, got going. The French Defence Minister Charles Hernu formed a task force to study the impact of space research on French military programme as part of an effort to "prepare for a French space presence" and to remain competitive "with the SDI. The French efforts, as officially, stated were not rival SDI but to maintain their competitive position in regard to advanced technology."¹⁰

The First EUREKA agreement was reached between Matra of France and Norsk Data of Norway. This agreement was reached between the two companies to develop high performance computer.¹¹

The West German research and technology minister, Heinz Riesen Luber and his French counterpart, Hubert Curien agreed on three part definition of EUREKA. They agreed that EUREKA should first address those technologies with a ready market, especially computers. It should also invest in technology aimed at solving transnational problem in Europe, such as toxic wastes and pollution and in a "very large infrastructural projects"¹² in which Europe already has expertise, especially rapid transit and telecommunication.

EUREKA as it was evolving apparently seemed to be an alternative to SDI. America was not very keen

on portraying SDI and EUREKA as incompatible for political reasons. The U.S. Vice President George Bush, after meeting French President Mitterand in July 1985, said that the SDI programme and EUREKA technology are not incompatible. He said "I more firmly believe ... there is no incompatibility between EUREKA ... and SDI. There is none "They understand our research programme, which is strictly related to strategic defence, and I think we understand much clearly their concept of collective research on broad technology as far as Europe is concerned."¹³

Bush acknowledged the fact that there had been concern in Washington that EUREKA was being poised to counter SDI after his meeting with the French President, he asserted that the differences have been narrowed down.

Despite the meeting between George Bush and Mitterand, France went ahead with its project. France pledged \$ 166 M for EUREKA programme during the year 1986. West Germany too promised \$ 106 MN towards EUREKA project in 1986 budget.

In addition, to 10 members of EEC, foreign and research ministers from Austria, Finland; Norway; Portugal; Spain; Sweden and Switzerland attended the charter meeting in Paris. The ministers gave their formal endorsement of

the EUREKA programme with a communique pledging their combine "energies and abilities in the field of high technology".¹⁴

The ministers agreed that Europe should unite its energies and abilities in the field of high technology. But they were not very sure of which technology (they should unite on) or who will pay for it. Such questions were left to be decided at a later day. There was no consensus over the objective of EUREKA. Differences of opinion on this question could prove to be very detrimental for the very survival of EUREKA.

About funding, only W.Germany and France had pledged funds. Britain's position was that, private rather than state capital should provide the bulk of funding.¹⁵

The major hitch emerged over the question of funding EUREKA programme. Britain insisted upon private industries taking up the mantle and denied any government funding of the project. Britain probably was creating the hitch as it was not sure of its own participation.

However, despite the fact that EUREKA was not making much head way and developed snag in the initial phase itself, France was firm that it would not participate

in SDI project. It characterized SDI, as a space Maginot Line, that France, for one would be able to penetrate. Jacques, Chevalier, directing France's commissariat of Energie Atomique Military application department, said he believes it is possible to develop French warheads in the 1990s that will be able to defeat SDI.

On the 40th anniversary of the French atomic energy programme, Chevalier spoke of blinding SDI's radar and said that SDI's defence could be expected to be "more perinious" than the French Maginot line which failed to hold back the Germans at the beginning of World War II. He was of the opinion that SDI could be overcome at low cost by diversionary tactics and penetration aids, varying the trajectories of the missiles and through improved warheads. He also spoke of French development of low flying cruise missiles for avoiding detection by radar.¹⁶

France at any rate wanted to maintain the credibility of its nuclear forces. Paul Quiles, the Defence Minister speaking at National Institute for Defence studies, informed that France would proceed with efforts to develop a miniaturized nuclear warheads that would elude detection on a radar, Quiles asserted.

"The more the two superpowers emphasize programmes

of the strategic defence, the more will the penetration capacity of our missiles become the fundamental criterion of the credibility of our deterrence.¹⁷

Nuclear deterrence, as in most European countries, is the cornerstone of French defence policy. France was determined to protect it. Quiles even asserted that SDI programme emerged more out of ideology rather than strategic consideration of US. For Quile, extended nuclear deterrent could hardly prove ~~credible~~^{credible}. Among the West European countries, France maintained the strongest reservation.

On Dec 9, 1985, the US Defence Secretary Mr. Casper Weinberger met the French Defence Minister Paul Quiles for more than two hours at Pentagon. The discussion was dominated by an explanation of SDI. After the meeting a senior defence official expressed the view that French defence chief got a "better understanding of the strategic reasons of the programme, of the parameters of the programme in terms of funding and the amount of participation that might be available to companies in foreign countries".¹⁸ Quiles visit was designed as a get acquainted session and not intended to sign any agreements.

There was a public opinion poll conducted in France over the question of SDI at the end of the year 1985. The question that was put to the respondents was

"Do you yourself think that United States should ...
construct a defensive system in space".

The result is given below in the table.

SOFRES PUBLIC OPINION POLL, PERCENTAGE RESULT

	<u>POLITICAL PREFERENCE</u>				
	TOTAL	PCF	PS	UDF	RPR
U.S. should do it	39	13	36	52	61
U.S. should not do it	39	74	50	30	24
No opinion	22	13	14	18	15

SOURCE : INTERNATIONAL AFFAIRS(LONDON), 1985

Art by - J.Fenoke (p.p.249)

PCF - PARTI COMMUNISTE FRANCAIS
PS - PARTI SOCIALISTE
UDF - UNION POUR LA DEMOCRATIE FRANCAISE
RPR - RASSEMBLEMENT POUR LA REPUBLIQUE

President M. Mitterand and M. Laurent Fabius
of PS can be expected, in any future governmental position
to continue to bear the same negative attitude towards DI.

The PS position bear strong resemblance to government position but it appears to be a bit ahead of government in the sense that it considers SDI as an obstacle to superpower arms control talks. It is against any destabilization as a result of arms race in space.

UDF is a conglomeration of several small parties rallying behind former President Giscard d'Estaing. The former President is of the view that France and Europe can profit from participation in the American programme and as an incident, he cites the successful transfer of American nuclear power technology to France. He also proposes developing a European anti tactical ballistic missile (ATEM) and air defence system, based on European - American partnership.

M. Raymond Barre, who was prime minister during presidency of Giscard 'd' Estaing is nominally a member of UDF. In essence he had endorsed government position but he was critical of the Government for not succeeding in eliciting greater co-operation or co-ordination from its European partners.

RPR is lead by Jacques Chirac. His response to SDI is "YES". He justifies SDI on the basis that U.S. should not fall behind USSR space programme. He however, believed that total elimination of nuclear weapons will

never be realized and called for modification of ABM treaty which might permit partial deployment of defensive system. Offer of participation in SDI should be used as an occasion for joint European initiative.

The official position of not participating in SDI project has been belied by the industrial "Yes". French officials have made it clear that their official position would not hamper private, or even nationalized companies from getting SDI contracts. Matra Thomson, the two leading military high technology companies in France, both nationalized, seem to have developed interest in the SDI project.

As we proceed further, we will see that after elections in March 1986, there was a shift in official position of France, and Matra, the leading military company, got the first contract out of the SDI kitty.

After the elections in the beginning of the year 1986 (March), France acquired new right wing government whose defence minister Andre Giraud preferred SDI to Mitterand's EUREKA. The defence minister was of the opinion that French industry would have much to gain from SDI. This approach of Giraud had the potential of leading to problems with Mitterand but certainly it would make him popular among the French electronic companies, especially in arms and

aerospace as they would be direct beneficiary if France decides to join SDI.¹⁹

Reflecting a major shift in French policy, Premier Jacques Chirac said that United States SDI programme was justified and irreversible and France cannot remain disassociated. Chirac justified SDI on the ground that U.S. cannot remain behind USSR in strategic defense. "It would be completely irresponsible to remain on the side of the road". Chirac further asserted "The previous government had a very negative position while (his) government has much more positive view".²⁰ Chirac was convinced of the fact that US programme of SDI could not be changed, no matters whosoever is the President.

With Chirac open justification of SDI and expressed Willingness for a role in the project, emerged the conflict with President Mitterand. The President reiterated his opposition to French participation in the U.S. SDI. Mitterand said that France should avoid "getting involved in mechanism, in which it would not be able to take part freely and fully" in decision making.²¹ The open split over SDI highlighted growing strains between a socialist (with two years left of a 7 year term as President) and a Gaullist with Presidential aspiration

under an uneasy power sharing arrangement, they share broad responsibility for foreign office and defence.

President Mitterand had backed away from SDI on grounds that it might compromise French traditional foreign policy of independence. Moreover a French government panel had concluded that an effective space based defence against missiles is unlikely for at least another three decades. J.F. Delpech, research director of the National Centre for Scientific research concluded that, even if space based shield is deployed, it would probably be so imperfect that it could be pierced by missiles from the relatively small French nuclear arsenal.²²

With President Mitterand and Jacques Chirac taking two different positions, United States discovered a new mechanism to find allies in France. Private companies were invited from France by U.S. officials to participate in the SDI project. As a face saving device, U.S. officials came up with a statement saying that it would limit French participation in SDI because of France continuing trade with eastern bloc countries. They asserted "France still sells significant amounts of high tech goods to the East"²³, causing concern for the security of U.S. technology.

Very soon, SDIO trapped Matra of Paris (France) for negotiating a leading contract and to perform a study of sensor constellation configurations. This marked the first SDI contract to be let to a French firm. Till now foreign SDI contracts were awarded only to those countries that signed formal pacts with US of co-operative research on the programme to develop a defence against enemy Ballistic missiles.²⁴

France decided to co-operate with Germany to begin preliminary study of anti tactical ballistic missile (ATBM) System of special interests, according to French and German officials, include a tank-mounted high energy laser being developed in Germany by Messerschmitt - Boelkow - Blohm and Diehl, and the SA-90 surface to air missile system under development in France by Thomson - CSF and aerospatiale Germany was co-operating with US SDIO in studying ATBM, but though French industry were working for SDI research, the French government had desisted for supporting SDI project.²⁵

In Paris a public opinion poll result was published in Jan 1987. The poll was supervised by the French polling organization OPTEM. It was conducted in four European countries and time covered was Nov 86 to Jan 87.

A total of 4835 respondents were polled. For each of the four countries the total number of respondents were France 993; Britain 1463; Italy 510; West Germany 1986.

The respondents were asked question on European Defence and related issues. It was surprising that a large percentage did not have any opinion on the issue. French respondents proved to be most undecided, with between 11% to 21% of them answering that they had no opinion on the question asked.

Overall, Frenchmen and Britons favoured the reinforcement of Europe's defences more than their Italian and West German counterparts. However, West Germans and Britons favoured status quo in European defence matters.²⁶

The result of this above mentioned poll shows that the European common people were still nuclear about what was SDI and what it would lead to.

France has been trying hard to push up European efforts in space. Hermes is one such example. Hermes is a small space shuttle vehicle with wide range of roles. It's essentially a French brainchild, funded

by Franco-German money. Hermes could conduct "orbital intervention" for maintaining and repairing satellites. It could even conduct autonomous missions for Earth observation and material processing. By early 1987, France had been able to persuade the European space agency to back the project and aero spatiale had been appointed the main contractor.²⁷ Britain has been abstaining from the proposal to build Hermes.

In July, 1987, Andre Giraud, France's Defence Minister was in Washington for talks with his US counterpart, Casper Weinberger, and other leading politicians. Among the subjects on the agenda, it was believed that the two would examine France's role in USA SDI programme. Till date, France is not directly involved in SDI research preferring to keep its distance officially. However, French, private as well as public, companies are being allowed to participate individually.

For France SDI is yet another urgent reason for accelerating European efforts in space development. More than 65% of French people are of the opinion that space policy or strategy should be a joint European effort rather than co-operating with USA. This effort would be cheaper financially too.

Hermes 'space shuttle' in French brain child and France has been trying to persuade European nations to finance it. France has also urged the Europeans to support Helios (observation satellite). West Germany though has been supporting French ideas and programmes, has been unable to finance it adequately.

Paris is confident that a perfect defence against nuclear missiles is impossible, and hence it does not worry about the ultimate credibility of its own nuclear forces. But it has been justified in complaining about the added costs, which could be avoided or lessened by reinforcement of the ABM treaty.

French, moreover, sees SDI as an unilateral move of American President that is not really in the interest of Europe. France did not like the way the SDI programme was announced i.e. without consultation, like all other European countries.

French determination not to partake in SDI is reflected in its suggestion of EUREKA. France firmly believes that any defensive shield against nuclear missile, if at all should be developed, should come from a joint effort of European countries. Till now, it has maintained this position, hence not signed

Memorandum of Understanding with USA, like that of Germany and Britain, though French companies like Matra and Thompson are co-operating in SDI project.

Let us examine the features of French defence policy which reflects its response to SDI. France maintains that one cannot speak about disarmament without speaking about security; one cannot speak about security without speaking about the threat which one faces. It points out the serious imbalance between NATO conventional forces and Warsaw pact conventional forces. In addition, it points out that the distance between Moscow and Paris is only 1500 km which is very short and hence more vulnerable to attack. Other than this threat, French interests in other parts of the world is also pointed out; for instance military threat against friendly countries in Africa; threat to the security of its oil supplies. France, for these reasons wants to be prepared to meet the threats.

France thinks that security of its own territory and interests is its own responsibility. For this it has a nuclear force, without anybody's help. Modernization of these forces is another objective.

French government holds that it is aware of the risks of arms stockpiling and of the burden of military spending and also expresses willingness to reduce. But disarmament should bring about peace and security and not just disarm for the sake of it.

France says that it will welcome any reduction which would be non-discriminatory. France would like limitations to be put on the arms race in Spain. France put down proposals in Geneva in 1984. Some activities in space can be stabilizing, such as observation satellites; but other activities could be destabilizing.²⁸

M. Laurent Fabius, Prime Minister of France delivered a speech at the institute of Higher National Defence Studies on Sept 27, 1985. He pointed out that French policy of modernization of nuclear forces is vital in order to maintain their credibility. Friendship with FRG is also emphasized by the Prime Minister. Talking in favour of maintaining independent defence against the potential threats Fabuis says :

"This year negotiations opened between the Americans and Soviets in Geneva. We want them to produce a genuine agreement. We have refused to allow the French forces to be included in the reckoning because it is

independent and bears no relations, whatsoever to the arsenals of the two superpowers who must make the first moves.²⁹

About space, the Prime Minister says "... we want to avoid the emergence of arms with a very high destabilizing power ... We want 1972 ABM treaty maintained ... research ..., must remain in conformity with treaty."²⁹

Fabius maintained that if SDI comes into existence, it would lead to generation of new offensive weapons. He strongly comes out against SDI.

"We do not support the general concept underlying the SDI, namely that nuclear weapons would become powerless and would be superceded. We find that notion highly hypothetical and therefore questionable".³⁰

The Prime Minister also talked of joint Europeans effort. France is keen on co-operation with its European neighbours in military field. France claim to have established with FRG a structure of diplomatic and military co-operation unparalleled in Europe. France expects EUREKA to cement the solidarity in Europe. Difficulties in such a co-operation is recognized but France seems to be optimistic as European co-operation

has been demonstrated in programmes such as Eurodif; Ariane and Airbus.

Even Jacques Chirac, who thinks that SDI is necessary to counter Soviet space programme and that France should remain vigilant believes that deterrence remains to be the cornerstone of European security. He too agrees with Fabius in maintaining independent security system. He says :

"France will not agree to her forces being directly or indirectly taken into account in negotiations in which she doesn't intend taking part so long as the conditions she has laid down are fulfilled."³¹

About deterrence, Chirac says "so long as we faced with the excessive arms build up of the two superpowers and imbalance of the conventional forces in Europe, our security will involve the nuclear strategic deterrent".

Jacques Chirac too saw a point in European co-operation. He remarks,

"France is ready to emphasize still further her solidarity with her European neighbours. She sees no contradiction between the independence of her

decision-making that she wants to safeguard and the desire for solidarity that she is intent on expressing".³²

Relation with FRG is emphasized by Chirac. He speaks of going along the path established by General de Gualle and Chancellor Adenauer.

Despite Chirac differences with Fabius, consensus seems to emerge on the following issues -

1. They adhered to the idea of European Europe.
2. They adhere to the idea of special relation with FRG.
3. Their relationship with U.S. was competative(FABBIUS), coperative(Chirac).

These position fall within the parameters of French policy enunciated by Gen De Gaulle.

"Only we can say no to American protection". "Neither the Germans, nor the Italians, the Belgians nor the Dutch will say no. We alone can, and it is our duty to say so".³³

The French response make it evident that there could be no immediate breakout from nuclear deterrence and flexible response for U.S.A which is the logic of SDI. It also made it evident that the ABM treaty and SALT agreement were to be respected. This is made clear by the fact that though the Reagan administration had

given broader interpretation of ABM , it decided to abide by narrow interpretation .

The French response also showed that U.S.A. would have to engage in constant dialogue with Soviet Union in order to reduce their nuclear arsenal. Subsequent events like the I.N.F. make it evident that the French response like the British would preserve their nuclear arsenal while demanding reduction in nuclear arsenal of both the superpowers.

Finally, the French domestic scene witnessed the fact of French contractors putting pressure on French Government to support SDI. This pressure came under the American influence. It would not be out of place to suggest that the process of transnationalizing military -Industrial complexes is a complex and difficult one as also the process of arriving at a concensus on a transition regime from a nuclear deterrence.

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CONCLUSION

The concept of deterrence is very old though its importance in nuclear age had been exalted. Deterrence is "an attempt to indicate to an opponent that the costs of an action by him for outweigh benefits. Under deterrence, an actor A seeks to prevent another B from undertaking a course of action which A considers undesirable, by threatening to inflict unacceptable costs upon B in the event if the action is taken".¹

Deterrence should have three requirements. The three requirements are capability; credibility and communication.

Nuclear deterrence has undergone change, especially after the announcement of SDI. Let us see briefly how the concept has undergone change.

Initially nuclear deterrence was for preventing wars. Till 1954, nuclear deterrence was credible only for the U.S. as Soviet did not possess Intercontinental Ballistic Missile which could hit U.S. targets. But on the other hand U.S. had advantage of forward deployment. For instance U.S. deployed its nuclear bombers in strategic bases across Eurasian landmass from U.K. to Japan.

It is in this context that John Foster Dulles came up with the doctrine of "Massive retaliation". This doctrine advocated that, in case of Soviet aggression in Europe or elsewhere, it would be swiftly answered by a nuclear attack which would ruin U.S.S.R. in matter of few hours.

However, Massive Retaliation could not last for very long. Acquisition of I.C.B.M. by Soviets undercut the idea of Massive Retaliation. Now, the Soviet Union could threaten American homeland. Massive retaliation doctrine was criticized as it no longer held water.

McNamara strategy came up to replace Massive retaliation during Kennedy period. This new strategy emphasized both deterrence and limited war concepts. Distinction was drawn between counterforce and countercity targets. The objective was to avoid civilian targets and hit adversary military forces (counter force targets). U.S. hoped that the Soviets would reciprocate in the same way.

Soon Counterforce Doctrine revealed its weakness. The U.S. air force produced an endless list of military targets inside Soviet Union and demanded for more

nuclear weapons. The demand multiplied over a period of time. The Counterforce Strategy was leading to demand for unbelievable number of nuclear weapons. Moreover civilian and military targets could not be clearly distinguished.

Then came the era of Mutual Assured Destruction (MAD).

"This assured destruction" capability in McNamara formulation, was the capacity to destroy one fifth to one quarter of the Soviet population and one-half of its industrial capacity even after absorbing a first strike against U.S. strategic forces".²

At that time, it was concluded that Ballistic Missile Defence were not viable, regardless of the amount of money spent on it as Soviet would overcome these measures by a nuclear build up.

Hence the essence of MAD strategy was

"both sides to be vulnerable to each other's second strike capability, with population of either side being the hostages".³

The SALT-I argument signed between U.S. and U.S.S.R in 1972 was a reaffirmation of faith in MAD as a key to peace in nuclear age. It was expected

that MAD would preserve peace for a long time to come but this was not to be.

Mutual assured destruction did not endorse disarmament. The central concern of deterrence was not reduction of arms but maintenance of strategic stability. This led to awesome build up of nuclear arsenals.

The modernization of nuclear arsenals, like miniturization of warheads, accuracy of delivery system have undercut the essence of the theories of deterrence. The idea of stability has proved to be elusive. The best example of the failure of deterrence and arms control approach is the consequence of MIRV and technology. While the SALT talks were going on MIRV was not included in negotiations. Today, while INF and START treaties are on the agenda, MARVs and precision guided reentry vehicles (PGRV's) are not under discussion.⁴

Ronald Reagan's SDI has brought about a radical change in U.S. nuclear policy. His nuclear policy is based on the principle that "victory is possible".

"The doctrine is based on several propositions. First, a nuclear war can occur. Second, it can be won

in some meaningful sense. And third, for the U.S. to prevail and must have strategic superiority".⁵

We have travelled from Massive retaliation to Mutual Assured Survival(MAS). Reagan's SDI programme is based on the doctrine of MAS. It has undercut deterrence and, postulates that nuclear war can be won. This is very dangerous doctrine as it contemplates a nuclear war being fought(Details as to how MAS is destabilizing is discussed in Chapter -1).

Within NATO while there seems to be agreement at one level of the Soviet threat, there are differences of perception of the intensity of the threat in the context of Soviet goals, as also on the present policy means of the Reagan administration to tackle the Soviet's threat. Stanley Hoffman considers that empirical approach to the Soviet Union would adopt a mix of containment and search for agreements with the Soviet Union. This is opposed to the Reaganite characterisation of the Soviet Union as "centre of evil" to be destroyed in the first blow and save the free world through technological superiority encased in the evolving architecture of the SDI.

The European Government, without exception have impressed upon the Reagan administration to deal with SDI within the broad policy of arms control as represented by the process of SALT since the beginning of the 1970's. ABM treaty of 1972 has been supported by the West European allies of U.S. right from the initial stage. Even today, they do not want the treaty to be abrogated. Reagan's SDI is a direct challenge to ABM treaty. Now the Americans are talking of reinterpreting the ABM treaty in "changed condition".

Since in 1985 prospects emerged for a US - Soviet Summit owing to preasure in the U.S. Congress and Western allies as also the Gorbachev proposals of ridding the world of nuclear weapons till the 21st century, western allies of the U.S. wanted to impress upon the U.S. to conclude arms control agreement. This explains the British urgency to conclude a memorandum of understanding with U.S. on SDI. It wanted the U.S. to have political support of Britain and treat SDI within the Deterrence/MAD paradigm.⁶

It is the technological spin off that makes West European states favour SDI and not its strategic and disarmament implication. Any European support to SDI

hinges on the fact that it does not break out of SALT. At one level, it may be said that while SDI wants to do away with nuclear weapons by making them obsolete, the European nuclear power do not want to deviate from deterrence but want to move beyond to a safer world. In pursuance of their objective they support arms control measure.

Another question which needs mention in the "transition period" between offense dominated security to defence dominated security. Paul. H. Nitze, special adviser of the President and Secretary of State on arms control, asserts that BMD research (SDI) will take a number of years and during the intervening period.

"Deterrence must continue to rest almost exclusively on offensive nuclear capabilities. Thus our near term arms control objective is to restore the situation envisioned in the 1970's, Sharply reduced offensive forces and full compliance with the ABM treaty".⁷

Then the transitional phase would have deterrence, arms control i.e. reduction of offensive weapons; and controlled introduction of SDI.

In the year 1986, U.S. moved towards working out more concretely its arms control policy satisfying the European requirements.

- a. of ensuring deterrence in transitional phase
- b. its own desire of protecthg SDI for the future.

Implicit in the two positions is the linkage between offensive and defensive weapons as well as limitation and reduction of these weapons if a transitional regime is to work. Once again U.S. ignored the Soviet approach towards SDI as also the spirit and letter of the SALT process which aimed at deterrence by limiting and reducing offensive weapons.

At Reykjavik summit in October 1986, Gorbachev surprised the U.S. president with drastic and unprecedented package of proposals that accepted most of the western positions on ICBM's, SLBMs, ALCMs. But Reagan stuck to the U.S. interpretation of ABM. A U.S. Sovietologist remarked "a moment has been missed". Reykjavik proved to the world that it is possible to look at the world without a Democles nuclear sword and laser or a particle beam shield with mirrors.⁸

At the economic level, the process of interaction showed an attempt on the part of the United States to achieve closer linkage with its allies. In doing this, it signed Memorandum of Understanding with those governments that were willing. It adopted the tactic of luring private firms and putting pressure on these governments likenthat of France that were opposed to SDI. The complexity of the situation lies in the fact that while on the one hand the U.S. is prepared to offer contracts to foreign firms, on the other hand, there is the Glenn amendment which restricts this. Economic problems of employment in Europe and desire of not being left behind in technology made the Europeans more receptive to SDI, while the limitations of transnationalisation of military industrial complexes (MICs) could continue the headaches for the U.S. in matters of support to SDI. The Trilateral Commission is an example of an attempt at the transnationalisation of the MICs. The scientists by Brandth Commission are also a response to remanage economic realty of today.

European attitude towards SDI has been determined by an urge not to be left behind in the technological development. Britain and W.Germany, both support SDI but cannot escape the reality of being a European

nation and want to assert that identity. France represents this urge of European identity in most clear terms. Eureka, proposal of France is reflective of this urge.

Despite U.S. invitation to private firms in Europe to join the SDI effort the European firms fear that the contracts they may get may not be significant and worthwhile. Firms like Plessey of Britain and Dornier of FRG are interested in participating in SDI R&D.

It may tentatively be suggested that both at the politico strategic and economic level the European response to SDI may help in moving the world in the direction of a transition regime in which the entire spectrum of strategy and economy may undergo change. Given the push of the Gorbachev diplomacy, it is possible though still premature to imagine taking of steps towards a world of reduced confrontation. To the extent, this happens, the danger of arms race may be less in outer space. If stereotyped understanding of threats continues, there would neither be a world without nuclear weapons or without ballistic missiles, which have justified SDI at least in the minds of the Reagan administration.

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