

AD-A243 197



Defense Nuclear Agency  
Alexandria, VA 22310-3398

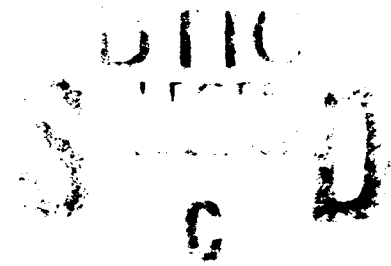


2

DNA-TR-91-129

**Report of the New Alternatives Workshop "GPALS  
and the International Security Environment,"  
March 6 - 7, 1991**

Dr. Kathleen Bailey, et al.  
National Security Research, Inc.  
3031 Javier Road  
Suite 300  
Fairfax, VA 22031



December 1991

Technical Report

CONTRACT No. DNA 001-89-C-0019

Approved for public release;  
distribution is unlimited.

91-17498

91 1210-030

Destroy this report when it is no longer needed. Do not return to sender.

PLEASE NOTIFY THE DEFENSE NUCLEAR AGENCY,  
ATTN: CSTI, 6801 TELEGRAPH ROAD, ALEXANDRIA, VA  
22310-3398, IF YOUR ADDRESS IS INCORRECT, IF YOU  
WISH IT DELETED FROM THE DISTRIBUTION LIST, OR  
IF THE ADDRESSEE IS NO LONGER EMPLOYED BY YOUR  
ORGANIZATION.



## DISTRIBUTION LIST UPDATE

This mailer is provided to enable DNA to maintain current distribution lists for reports. We would appreciate your providing the requested information.

- Add the individual listed to your distribution list.
- Delete the cited organization/individual.
- Change of address.

**NOTE:**  
*Please return the mailing label from the document so that any additions, changes, corrections or deletions can be made more easily.*

NAME: \_\_\_\_\_

ORGANIZATION: \_\_\_\_\_

**OLD ADDRESS**

**CURRENT ADDRESS**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

TELEPHONE NUMBER: (    ) \_\_\_\_\_

SUBJECT AREA(S) OF INTEREST:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DNA OR OTHER GOVERNMENT CONTRACT NUMBER: \_\_\_\_\_

CERTIFICATION OF NEED-TO-KNOW BY GOVERNMENT SPONSOR (if other than DNA):

SPONSORING ORGANIZATION: \_\_\_\_\_

CONTRACTING OFFICER OR REPRESENTATIVE: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

CUT HERE AND RETURN



Director  
Defense Nuclear Agency  
ATTN: TITL  
Washington, DC 20305-1000

Director  
Defense Nuclear Agency  
ATTN: TITL  
Washington, DC 20305-1000

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Service, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.				
1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE 911201	3. REPORT TYPE AND DATES COVERED Technical 910306 - 910307		
4. TITLE AND SUBTITLE Report of the New Alternatives Workshop "GPALS and the International Security Environment," March 6 - 7, 1991		5. FUNDING NUMBERS C - DNA 001-89-C-0019 PE - OSDMIPR, 62715H PR - RO TA - RA WU - DH 053000, 050910		
6. AUTHOR(S) Dr. Kathleen Bailey, Vice President, National Security Research, Inc.		8. PERFORMING ORGANIZATION REPORT NUMBER		
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) National Security Research, Inc. 3031 Javier Road, Suite 300 Fairfax, VA 22031		10. SPONSORING/MONITORING AGENCY REPORT NUMBER  DNA-TR-91-129		
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Defense Nuclear Agency 6801 Telegraph Road. Alexandria, VA 22310-3398 NASF/Smith		11. SUPPLEMENTARY NOTES This work was sponsored by the Defense Nuclear Agency under RDT&E RMC codes B4692C RO RA 00004 NASF 2430A 25904D and B4662D RO RA 00045 NASF 2430A 25904D.		
12a. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.		12b. DISTRIBUTION CODE		
13. ABSTRACT (Maximum 200 words) President Bush's introduction on the GPALS concept in his State-of-the-Union Address culminated a lengthy policy review responding to perceptions that, while the potential for a Soviet ballistic missile attack is growing more remote, proliferation of ballistic missile technologies makes a Third World ballistic missile threat more immediate. Technical progress made under the SDI holds the potential for mounting effective defenses against limited, accidental or unauthorized ballistic missile attacks in the programmatically relevant future. Patriot's success against Iraqi Scuds in the Gulf War and the political significance of this combat give further credence to this idea as being, both technically feasible and politically sound. Affordability of wide-area defenses under the GPALS concepts depends heavily on hybrid surface- and space-basing. Development of an operational GPALS capability requires readdressing provisions of the ABM Treaty, but there is reason to believe that the Soviets, more immediately affected by the Third World ballistic missile threat than the United States, would be amenable to renegotiating treaty provisions. The present reshaping of				
14. SUBJECT TERMS GPALS BMD Proliferation SDI MTCR Space-Based Defenses ATBM ABM Treaty Third World Ballistic Missile Threat			15. NUMBER OF PAGES 56	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT UNCLASSIFIED	18. SECURITY CLASSIFICATION OF THIS PAGE UNCLASSIFIED	19. SECURITY CLASSIFICATION OF ABSTRACT UNCLASSIFIED	20. LIMITATION OF ABSTRACT UNCLASSIFIED	

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE

CLASSIFIED BY:

N/A since Unclassified.

DECLASSIFY ON:

N/A since Unclassified

6. AUTHOR(S) (Continued)

Mr. Manfred Braitingger, Director, Missile Division and Extended Air Defense,  
Industrie Anlagen Betriebs Gesellschaft

Dr. Stephen Cambone, Director, Strategic Defense Policy, OASD/ISP

Mr. Henri Conze, former Chief of International Relations, General Directorate  
for Armament, French, MoD

Ambassador Henry Cooper, Director, Strategic Defense Initiative Organization

Dr. Jack D. Crouch II, Principal Deputy Assistant Secretary of Defense,  
International Security Policy

Mr. Gerald Frost, Director, Institute for European Defense Strategic Studies

Dr. Dore Gold, Jaffee Center, Tel Aviv University

Dr. Daniel Goure, Director, Competitive Strategies Office, Office of the Under  
Secretary of Defense (Policy)

Dr. Colin S. Gray, President, National Security Research, Inc.

Mr. Douglas R. Graham, Deputy Assistant Secretary of Defense for Strategic  
Defense, Space, and Verification Policy

Dr. Keith B. Payne, Executive Vice President, National Security Research, Inc.

Ambassador Paul Wolfowitz, Under Secretary of Defense for Policy

13. ABSTRACT (Continued)

the U.S. defense establishment in response to a changing strategic situation  
and tighter resource constraints should be seen as a propitious moment to  
pursue Executive/Congressional accord on GPALS.

SECURITY CLASSIFICATION OF THIS PAGE

UNCLASSIFIED

## SUMMARY

The Defense Nuclear Agency sponsored a workshop on March 6-7, 1991, entitled "GPALS and the International Security Environment." The workshop was conducted by National Security Research, Inc., and co-chaired by Major General Gerald G. Watson, USA, and Dr. Colin S. Gray. The purpose of the workshop was to support DNA's continuing exploration of alternative national security policies by providing a high level forum for communicating and exchanging new ideas on U.S. defense strategy. This workshop responded to recent dynamic geopolitical change and new options in the strategic defense area. It was intended to stimulate informed thought about an important national security policy initiative, Global Protection Against Limited Strikes, at a pivotal moment in its development.

Speakers at the workshop represented a broad cross section of policymakers, military planners, operators and technologists. They were from both the military and civil sides of the government and a variety of non-governmental organizations. Of particular note were presentations by Ambassador Paul Wolfowitz, Under Secretary of Defense (Policy) and Mr. Stephen Hadley, Assistant Secretary of Defense (International Security Policy). Proceedings were conducted on a not-for-attribution basis, unless the speaker agreed otherwise.

This report summarizes the workshop proceedings. It presents ideas expressed in the course of the workshop in accordance with the principle of non-attribution except in specific cases where participants agreed that their remarks could be attributed.

CLASSIFIED  
CONFIDENTIAL  
EXCLUDED FROM AUTOMATIC  
DOWNGRADING AND  
DECLASSIFICATION  
PROCEDURES  
UNLESS INDICATED  
OTHERWISE  
DATE 10/20/99 BY 1043  
A-1

## TABLE OF CONTENTS

Section	Page
SUMMARY.....	iii
1 INTRODUCTION.....	1
2 GPALS CONCEPT AND COMMON SENSE RATIONALE.....	2
MR. DOUGLAS R. GRAHAM, DEPUTY ASSISTANT SECRETARY OF DEFENSE FOR STRATEGIC DEFENSE, SPACE, AND VERIFICATION POLICY	
2.1 Discussion of the Common Sense Rationale.....	5
2.2 The Proliferation Threat.....	6
2.3 Response Options.....	7
3 GPALS AND THE NEW INTERNATIONAL ORDER.....	10
AMB. PAUL WOLFOWITZ, UNDER SECRETARY OF DEFENSE FOR POLICY	
3.1 Discussion on GPALS and the New International Order	12
3.2 GPALS Technical Characteristics.....	13
3.3 Discussion of Technical Characteristics.....	17
3.4 Alternatives or Complements for Responding to Limited Threats .....	17
3.5 Discussion of Alternatives.....	19
4 GPALS PROGRAM STATUS.....	21
AMB. HENRY COOPER, DIRECTOR, SDIO	
4.1 Discussion of GPALS Program Status.....	24
5 ALLIED VIEWS AND ALLIANCE CONSIDERATIONS.....	25
5.1 France.....	25
Mr. Henri Conze, Former Chief of International Relations, General Directorate for Armament, French, MOD	
5.2 United Kingdom.....	27
Mr. Gerald Frost, Director, Institute for European Defense Strategic Studies	
5.3 Israel.....	29
Dr. Dore Gold, Jaffee Center, Tel Aviv University	



**TABLE OF CONTENTS (Continued)**

Section	Page
5.4 Germany.....	31
Mr. Manfred Braitinger, Director, Missile Division and Extended Air Defense, Industrie Anlagen Betriebs Gesellschaft	
5.5 Discussion of Allied Views.....	32
6 THE SOVIET DEBATE CONCERNING MUTUAL BMD DEPLOYMENT.....	34
DR. KEITH B. PAYNE, EXECUTIVE VICE PRESIDENT, NATIONAL SECURITY RESEARCH, INC. AND DR. DANIEL GOURÉ, DIRECTOR, COMPETITIVE STRATEGIES OFFICE, OFFICE OF THE UNDER SECRETARY OF DEFENSE (POLICY)	
7 GPALS AND POLICY IMPLEMENTATION.....	38
7.1 Discussion of GPALS and Policy Implementation.....	38
7.2 Congressional Views Regarding GPALS.....	39
8 GPALS AND ARMS CONTROL.....	41
DR. KATHLEEN BAILEY, VICE PRESIDENT, NSR AND DR. STEPHEN CAMBONE, DIRECTOR, STRATEGIC DEFENSE POLICY, OASD/ISP	
9 DETERRENCE IN A MULTIPOLAR WORLD.....	43
DR. JACK D. CROUCH, II, PRINCIPAL DEPUTY ASSISTANT SECRETARY OF DEFENSE, INTERNATIONAL SECURITY POLICY	
10 LIST OF REFERENCES.....	45

## **SECTION 1**

### **INTRODUCTION**

The March 1991 New Alternatives Workshop, "GPALS and the International Security Environment," focussed on the Global Protection Against Limited Strikes (GPALS) program. The workshop offered the opportunity to examine GPALS from different angles including: technology, mission, policy implications, compatibility with evolving U.S. defense policy, arms control, non-proliferation measures, the views of allies, the views of the Soviets, and finally force structure impacts such as those associated with offense/defense integration.

## SECTION 2

### **GPALS CONCEPT AND COMMON SENSE RATIONALE (MR. DOUGLAS R. GRAHAM, DEPUTY ASSISTANT SECRETARY OF DEFENSE FOR STRATEGIC DEFENSE, SPACE, AND VERIFICATION POLICY)**

Mr. Graham described the GPALS concept and its rationale in terms of the emerging strategic environment. His presentation proceeded along the following lines.

President Bush's introduction of GPALS to the American public in his State-of-the-Union Address on January 29 was the culmination of a series of reviews concerning defense policy in general, and missile defense in particular. The review process included the National Security Strategy Review, completed in March 1989, the June 1989 Presidential Guidance on Strategic Modernization and the SDI Program, the "Cooper Study" independent review of the SDI program conducted in the fall and winter of 1989-90, the OSD Policy/Strategy and Technical Feasibility Analysis conducted in the spring and summer of 1990, and the SDIO Study of GPALS Technology/Architecture of the fall and winter 1990. Results of the OSD and SDIO studies were briefed at the Secretary of Defense level in the winter of 1990. GPALS was briefed to the President and senior officials on January 3, 1991. Then, in the State-of-the-Union Address, the President said:

Looking forward, I have directed that the SDI program be refocused on providing protection from limited ballistic missile strikes, whatever their source. Let us pursue an SDI program that can deal with any future threat to the United States, to our forces overseas and to our friends and allies.

This followed by eleven days the first successful Patriot intercept of an Iraqi Scud, the first ever destruction of a hostile ballistic missile by an anti-ballistic missile.

The decision to pursue GPALS resulted from major changes in strategic planning assumptions. In the 1980s the adversarial relationship between the United States and the Soviet Union had driven the strategic competition. SDI had been designed against unconstrained Soviet strategic offensive forces and countermeasures programs. Phased defensive deployments--Phase I, Phase II, III...--were planned to deal with this ever-increasing Soviet threat.

During the late 1980s and early 1990s, however, changes in the strategic environment led to changes in planning assumptions. For example, the improvement in U.S.-Soviet relations decreased the likelihood of general war. Increasing regional autonomy, however, and the proliferation

of advanced military technology, including ballistic missiles and weapons of mass destruction, has increased concern about limited missile threats. Similarly, political turmoil in the Soviet Union has increased concern about the potential for the Accidental/Unauthorized Launch (A/UL) of ballistic missiles.

"Refocusing" strategic defensive programs to address these kinds of threats involves shifting attention from a massive Soviet attack to limited strikes; and from a relatively large-scale Phase I deployment of Ballistic Missile Defense (BMD), to a smaller deployment of space- and ground-based defenses to provide global and continuous protection against limited missile strikes. Perhaps most fundamental to this new focus is the growing realization that offensive force-based deterrence will provide a questionable basis for responding to the emerging limited ballistic missile threat.

Third World ballistic missile capabilities are developing steadily in terms of range, accuracy, payload, and warhead variations including chemical, biological, and nuclear. Extensive trade networks are being developed for these technologies. Even without great technical advances, however, the psychological effects of Third World ballistic missiles--as demonstrated in Israel and Saudi Arabia--pose potentially enormous political problems.

The changing strategic environment and the experience of the Gulf War demonstrate the relevance of a capability to protect against limited missile strikes in the new international security environment, just as Patriot's successes demonstrate the technical feasibility of missile defenses.

Strategic defenses should be seen as adding a new dimension to U.S. military capability: protection against limited ballistic missile attacks on U.S. expeditionary forces, forces and facilities stationed abroad, and U.S. friends and allies, as well as protection of the United States itself against Soviet or Third World limited missile strikes. Opportunities now exist for the development of strategic defensive capabilities in a manner that demonstrates and validates applicable technologies, continued cost reductions, increased survivability and effectiveness, and reduced complexity.

GPALS provides an appropriate level of defense within a U.S. strategic force structure for the foreseeable future. A future decision to pursue more ambitious strategic defensive objectives could, however, necessitate defense deployments beyond GPALS. Changes in international conditions could lead to such a decision. Such changes could include, political

developments within the Soviet Union, progress in START or DST, or new developments in the Third World threat.

Embedded in these larger considerations are two very specific considerations concerning GPALS. The first is the central importance of keeping the space-based dimension in GPALS. Space-based sensors are important even for ground-based interceptors, as demonstrated by Patriot during the Gulf War. True global protection against limited threats requires space-basing because space-based assets are always in position. They can help to protect U.S. access to a conflict and the ability to deploy expeditionary forces. Space-based assets also can protect many targets across a wide area more affordably than can be done from the ground.

In addition, by providing wide-area protection to friends and allies, space-based defenses can preserve the option of a coalition approach to meeting regional crises. The vulnerability of key allies to Third World ballistic missiles could undermine the type of coalition-building seen during Desert Shield and Desert Storm.

Space-based assets also offer a key hedge against a resurgent Soviet threat by providing the defensive layer most effective against MIRVed systems.

The second specific consideration concerning GPALS is the advanced technology for theater ballistic missile defenses that it provides. As the United States accords its own TMD programs heightened priority, the prospects for increased cooperation with our allies on TMD will increase. GPALS enables the United States to build upon ongoing cooperation in theater architecture studies, computer-based TMD test beds, and interceptor research. It opens other areas of cooperation. If allies choose to develop and deploy their own TMD, GPALS is adaptable enough to accept integration of allied systems. Thus, U.S. sensors could support allied TMD intercept operations or even add the space-based layer over allied terminal defenses, enhancing their effectiveness.

The political viability of the GPALS concept appears to be a particular strength in comparison with other SDI architectures. Given the demonstrated need for missile defense during the Gulf War, GPALS should receive strong U.S. public support. GPALS is also more affordable than other concepts at a time when costs count. Because of Soviet vulnerability to Third World ballistic missile threats--a vulnerability greater than that of the United States--GPALS might generate U.S.-Soviet cooperation sufficient to overcome ABM Treaty problems.

Recent remarks by President Bush and Secretary of Defense Cheney serve to highlight the operational utility of anti-missile programs:

Thank God that when the Scuds came, the people of Israel and Saudi Arabia, and the brave forces of our coalition had more to protect their lives than some abstract theory of deterrence.

Thank God for the Patriot missile.<sup>1</sup>

And,

The notion that the United States can get by without a defense against ballistic missiles in the years ahead is just goofy.<sup>2</sup>

## **2.1 DISCUSSION OF THE COMMON SENSE RATIONALE.**

The discussion that followed produced the following observations.

- The interest of allies in either U.S. or indigenous TMD capabilities is growing. Some have expressed particular interest in Patriot, while others, like Israel and some of our West European allies, are actively engaged in developing their own systems.
- Forward basing for GPALS on the territory of allies is not presently considered necessary because of the broad area coverage of the space-based components of GPALS.
- The specific threat envisioned as the basis for the present GPALS concept was described as being from tens to 200 attacking warheads with the requirement being to get "more than one shot" at each.
- There is a possibility of placing surface-based GPALS elements on ships. The consensus was that at-sea basing might prove to be a relatively efficient way to deploy GPALS surface elements.
- Getting the Congress to focus on the emerging Third World ballistic missile threat to the United States itself will present a challenge.

## 2.2 THE PROLIFERATION THREAT.

Several presentations and a great deal of discussion were directed at better understanding the proliferation of ballistic missiles and chemical, biological, and nuclear warhead technology in the Third World. The pace of the development of ballistic missile technology within the Third World has been rapid, and shows little sign of abating. When one considers the problems Iraq gave the coalition with 1950s vintage missile technology, it compels consideration of what a comparable Third World power could do in, say, the year 2000 when it has longer-range solid-fueled rockets with rapid launch and reload, a variety of conventional and unconventional warheads, and greater accuracy. It is likely that there will be several such countries by the end of the century. There are reportedly 12 countries with indigenous ballistic missile development programs now, and there will be perhaps 15 by the end of the decade. In the Third World increasing attention is being devoted to training of technical talent, swapping technology with other states, and acquiring new ballistic missile technology.

The importance of ballistic missile technologies to Third World countries is often misunderstood. Why would a Third World state invest in ballistic missiles when combat aircraft are cheaper? As shown by Iraq, many Third World air forces are largely ineffective while the penetration of reliable ballistic missiles in the absence of BMD is certain. Many Third World countries cannot maintain the elaborate infrastructure required to keep a modern air force flying. Ballistic missiles do not require this same infrastructural support.

Similarly, shorter-range--40-100km range--missiles have great importance in some Third World settings. In view of the small geographical dimensions of some Third World countries and the proximity of major capitals to hostile borders, even short-range missiles can have significant strategic effect.

The trends in Third World missile capabilities are unmistakable. First, their range is increasing. Just as recent experience with Iraq illustrated in terms of Iraqi efforts to extend the range of the basic Scud, the next few years may see as many as six Third World countries with 1000km range missiles and three with missiles of 3000km range. Several additional Third World countries (beyond the existing Chinese capability) may have an ICBM capability within ten years. Second, the quantities of missiles are also increasing; witness the prolonged Iraqi Scud campaign. Third, accuracy is improving. Introduction of SS-21 class superpower missiles into the Third World, and general availability of commercial GPS navigation equipment set this

trend. Finally, the ordnance is becoming more sophisticated. The coincidence in the Third World between ballistic missile programs and chemical, biological, or nuclear weapons programs is high. The overall sophistication of missile designs is increasing, as is the number of countries with effective mobile launchers.

Cruise missiles are yet another category of missile technology that, while technical prerequisites have to date been unavailable in the Third World, could at some future time be seen as a more attractive option if barriers to ballistic missile development prove effective.

Clearly, interest in missiles in the Third World is high, and their capability is increasing. Such systems will soon threaten the United States and its allies. Undoubtedly, were it within his grasp, a missile capable of hitting the United States would be Saddam Hussein's number one priority. Prior to the war Saddam made statements suggesting his desire for a capability to strike the U.S. with ballistic missiles:

Our missiles cannot reach Washington. If they could reach Washington, we would strike it if the need arose.

Colonel Khadaffi said the same thing quite clearly after the April 15, 1986 bombing of Libya, when he vowed:

Did not the Americans [in the air strikes on Tripoli and Benghazi] almost hit you... If they know that you have a deterrent force capable of hitting the United States, they would not be able to hit you. If we had possessed a deterrent--missiles that could reach New York--we would have hit it at the same moment. Consequently, we should build this force so that they and others will no longer think about an attack.<sup>3</sup>

### **2.3 RESPONSE OPTIONS.**

While the workshop emphasized military options for countering ballistic missile proliferation, several presentations and a great deal of discussion explored political and economic responses to proliferation. There was general agreement that proliferation, like the international drug trade, is a complex process, and a package of measures will need to be applied in response.

Direct restrictions on the transfer of missile-related technology such as the Missile Technology Control Regime, however partial their success may be, were seen as essential to slowing proliferation. The MTCR was established by seven major technological powers (United States, Canada, United



Kingdom, France, Germany, Italy and Japan). There is a second tier of new members (Spain, Australia, Belgium, Netherlands, Luxembourg, Norway, and Denmark), and other nations are in the process of joining. The MTCR's purpose is to slow the spread of ballistic missile technology. While MTCR restrictions have not been totally effective, they have been useful, and have had some successes such as helping to slow the CONDOR II IRBM program of Argentina, Egypt, and Iraq.

Yet, three factors make export controls on missile technology inadequate: 1) The technology is widespread and can be obtained from multiple sources. 2) Even when production information is withheld, it can often be obtained through reverse engineering. 3) The technology is multi-purpose and can be sought in a peaceful civilian context (i.e., satellite-launch vehicles) and later converted to military purposes.

One criticism of U.S. commercial policy was that the United States does a poor job of monitoring its technical exports. Moreover, in the interest of stimulating sales the United States is evidently in the process of decontrolling the movement of technology even more. Monitoring the "instant companies" that have sprung up to facilitate some of the most serious surreptitious movements of military technologies has not been effective. The sale several years ago of 100 helicopters to North Korea while U.S. authorities thought they were going to West Germany is a case in point.

A subject of intense discussion was the degree to which students from Third World states should be allowed to gain key missile-related scientific education and technical training from advanced degree programs at American or other Western universities. There was wide agreement among participants that this does happen, is significant to Third World weapons programs, and is difficult to arrest. One suggestion offered was the encouragement of aggressive scholarship programs for American scholars in these disciplines to keep the research institutes well filled with Americans working in the most sensitive disciplines, thereby displacing foreigners. A potentially useful thought in this area was that the defense community need not be out in front in this area; businesses should "pull this wagon."

Another participant observed that the present ballistic missile threat should cause a revisiting of civil defense programs as a way to complement the protection provided by active anti-missile defenses.

A policy/strategy-level appreciation of the Third World ballistic missile threat stimulated one participant to reflect on lessons learned from World War II in terms of the projection of land power in the face of an enemy with an air

force. One would not think of putting U.S. forces overseas without air defenses--indeed, air superiority. From now on, the United States will be obliged to provide ballistic missile defenses for its expeditionary forces. The time has passed when the military arm of U.S. foreign policy can be deployed without some form of ballistic missile defense coverage. In this way, GPALS will become an essential element of U.S. foreign policy.

BMD might, in fact, discourage ballistic missile proliferation, and ballistic missile use by undercutting the military and political utility of ballistic missiles. In addition, it should help increase the credibility of U.S. defense commitments and provide a measure of reassurance to allies.

The United States was surprised that Iraq was not deterred from attacking Kuwait on August 2. U.S. policymakers are not used to dealing with countries like Iraq as the central focus of U.S. defense strategy, and they are looking at what will probably prove to be a more volatile world than in the past.

Many participants agreed that now is indeed the time to "go after" strategic defenses. The Administration now has the ability to mobilize support behind GPALS. After watching weeks of Scud attacks on CNN, the American public is sensitized to the ballistic missile threat. They believe that being undefended is unacceptable.

### SECTION 3

#### GPALS AND THE NEW INTERNATIONAL ORDER (AMB. PAUL WOLFOWITZ, UNDER SECRETARY OF DEFENSE FOR POLICY)

Ambassador Paul Wolfowitz emphasized the timeliness of this New Alternatives Workshop and the particular topic of GPALS. We have clearly entered a new international order. Under the influence of pre-Munich pessimism, British politician Stanley Baldwin said: "The bomber will always get through." Hussein's advisers probably told him that the Scud would always get through. Like the bombers, the Scuds did not always get through. That is very important: one that got through cost the United States 25% of the American dead in the war.

Operation Desert Storm was a technological success story. We can hit a bullet with a bullet. It was a strategic success as well. The debate over ballistic missile defenses should have ended last month. Naysayers claim that the Scud is a primitive missile. It is, but that does not challenge Patriot's demonstration that ballistic missile defense is practical. Our experience with the Scud threat confirms that we need better defenses. Of particular interest is a wide area defense which Patriot--developed under ABM Treaty constraints--was not intended to provide.

U.S. strategic direction is changing. The fundamental assumption of the last 40 years has been the need to prepare for short, global war to keep the Soviet Union from conquering Europe. 1989 and '90 have transformed U.S. security concerns. East Europe is free, the Warsaw Pact has collapsed, and Germany is united. A short-warning war in Europe is much less likely.

At the same time, regional threats to U.S. interests have been growing. Local sources of instability threaten to foster conflict. While the USSR is slowing its military build-up, the resistance of its military establishment to cuts has been strong, even in the midst of a grave economic crisis. The Soviet Union's armies will retain the largest military force in Eurasia. At the same time, western allies are disarming rapidly--faster than implied by arms control progress, faster than the Soviets. The U.S. armed forces are undertaking changes that will render them a modernized but smaller institution. Secretary Cheney's SASC testimony spells this out.

The focus has clearly shifted from global war to regional conflict. The Gulf War offers a model of things to come. By the year 2000 we will be confronted with 15 additional states capable of indigenous ballistic missile production, 8 additional states may have nuclear weapons, 30

with chemicals, and 10 with biological agents. Our own force needs in response to these developments will be determined by four missions: strategic deterrence, forward presence, crisis response and reconstitution. GPALS can contribute to each of these.

Forward presence: missile defenses will be carried along with U.S. forces. In the Gulf War all of our regional allies asked for ballistic missile defenses. Qatar and Bahrain wanted them as well as Israel and Saudi Arabia. We were fortunate to be dealing with a primitive missile threat--too inaccurate to threaten military bases seriously. Missile defenses can defend U.S. forward deployed forces and our allies and enable the United States to continue playing a leadership role in safeguarding regional security and stability despite the proliferation of ballistic missiles.

Crisis response: Space-based systems will provide short notice protection of U.S. forces as they deploy. Thanks to Patriot, despite nearly 90 Scud launches, Desert Storm was prosecuted according to the allies' timetable and method, not the Iraqis'. Patriot deployments provided a prime example of the political-military leadership possible through the extension of protection against ballistic missiles. In this case missile defenses provided the protection necessary to prevent Scud attacks from threatening the unity of the coalitions.

Reconstitution guards against a resurgence of the Soviet threat or the appearance of another, now unanticipated, serious threat. GPALS represents the appropriate level of strategic defensive capability for the foreseeable future; if U.S. defense requirements expand as a result of future changes in international conditions, however, the SDI program will have developed the systems and technologies necessary to augment U.S. missile defense capabilities.

At the same time, it is important to point out that Patriot was not the only weapon that was effective against Scuds. U.S. tactical air power, F-15s and other aircraft, also helped by destroying mobile launchers. Admittedly, the Iraqis were able to sustain Scud launches throughout the war. This is clear testimony to how hard it is to find "hideable" targets.

The Gulf War experience and research to date point to layered defense as the best approach to countering missiles of all range capabilities, and hit-to-kill intercept technology as the basis for interceptor and guidance system design. Such intercepts, particularly at longer ranges should minimize damage from fragments of intercepted missiles falling on urban centers.

The ballistic missile war in the Gulf testifies to a major military-technological revolution that is taking place around us, and the significance of ballistic missile proliferation. Besides active defenses there are four supporting elements or pillars that need to be sustained if the United States is to cope with the challenge:

1. Diplomatic efforts. Measures such as MTCR and the Non-Proliferation Treaty have not proven adequate to furnish the answer to proliferation. Yet, this is no reason to give up on them. It is a reason to improve them. These efforts are important to slow down proliferation, even if they do not halt it.

2. Developing "counter-battery fire" approaches to deal with ballistic missiles. This is challenging. The fact that the United States has given up INF-range ballistic missiles and GLCMs means that we must depend on air power or space, or else tear up the INF Treaty. Special forces may be another option with considerable utility.

3. Deterrence: We must enhance deterrence, recognizing that it may not be fully applicable in the Third World. Deterrence probably can be created in a mind like Saddam Hussein's; it may have prevented the Iraqi use of chemical weapons. Deterrence may, nevertheless, not be sufficiently reliable to meet the threat posed by the proliferation of advanced military technology.

4. Discouraging proliferation by means of defense. Effective defenses will provide protection in the event deterrence fails, and it will assist efforts to halt ballistic missile and NBC weapon proliferation by devaluing these systems.

### **3.1 DISCUSSION ON GPALS AND THE NEW INTERNATIONAL ORDER.**

The unexpected difficulty tactical air power experienced in finding and destroying Iraqi Scud launchers drew particular comment. It was seen as having direct impact on the strategic relocateable targets debate. While finding mobile Scuds was never expected to be easy, it was impressive how much better the Iraqi ability to hide the Scuds was than we thought it would be. Some portions of this problem have technical fixes. There is a need to consider this Iraqi experience, as well as give additional credence to Soviet doctrine that has long emphasized the value of hiding forces as a countermeasure.

The Scud launcher experience also re-opens questions such as verification of mobile missiles under arms control

regimes. Does (or should) this move us toward advocating a total ban on mobile missiles?

Lessons learned in the Gulf War may also affect the B-2 debate. One participant acknowledged earlier skepticism over the utility of stealth technology, but felt that the Gulf War performance of the F-117As demonstrated the value of stealth. With regard to bomber range, several participants observed that in the future we may have to operate without the base access we were granted in this case.

One participant asked whether or not, if we defend forward deployed U.S. forces, we would be under pressure to defend local allied forces and populations as well. The response was: "Yes." Calls for Patriot came in fast. Television was particularly helpful in advertising Patriot by showing the first intercept. The ability to protect allies or host countries is most important. A BMD capability would allow us to ask allies to help in other areas while U.S. defenses provided protection for allies against missile attack.

The President's reference to "...an abstract theory of deterrence..." was raised. Did it appear that the Administration was prepared to reject a purely offensive forces-based deterrence policy and deploy GPALS? The response was: We are not yet at the deployment decision point with GPALS.

### **3.2 GPALS TECHNICAL CHARACTERISTICS.**

GPALS represents a significant shift in military missions from SDI's Phase I. Under Phase I, strategic defenses were to:

- Deny Soviet first strike objectives by disrupting timing and structure of a massive attack.
- Reduce damage to specified targets as directed by the NCA (e.g., prevent crippling strikes against U.S. command and control assets).
- Protect the United States against Soviet and Third World accidental, unauthorized, or limited ballistic missile strikes.

GPALS shifts the focus away from the first two missions and expands the protection mission, resulting in:

- Protection against:

-- Attacks on the United States from Soviet and Third World accidental, unauthorized or limited ballistic missile strikes.

-- Attacks on U.S. forces overseas and U.S. allies from ballistic missile strikes.

A representative GPALS deployment then would include:

- Transportable surface-based defenses against theater/tactical ballistic missiles.

-- Owned and operated by the United States and U.S. allies.

- Ground-based defenses against strategic ballistic missiles.

-- 50% fewer interceptors than for Phase I.

-- Space- and surface-based sensors.

- Brilliant Pebbles providing defense against ballistic missiles with range greater than several hundred miles.

-- 75% fewer Brilliant Pebbles than for Phase I.

This array is intended to result in multiple Brilliant Pebbles shots per attacking missile for longer range missiles. It would also provide varying shot opportunities against all attacking missiles depending on trajectory, location of specific target versus location of surface-based interceptors, and concentration of defenses around specific targets. Space- and ground-based assets overlap. This is significant for understanding the cost efficiencies embodied in GPALS. While a point-defense system such as Patriot can be shown to be cost-effective for an area with dimensions on the order of the urban centers of Israel, trying to attain area defenses by deploying additional Patriots quickly becomes prohibitively expensive. Congressman Bennett estimated that \$3 trillion worth of Patriots would be required to spread a protective layer across the United States. The space-based Brilliant Pebbles would provide global coverage for only \$10 billion.

GPALS, as now conceived, consists of the following components:

- Ground-Based Interceptor (GBI)--A long-range, surface-based interceptor that uses a kinetic energy vehicle to destroy RVs in the midcourse phase of their trajectories, before they begin

to reenter the atmosphere. It has an onboard discrimination capability and can contribute to adaptive and preferential defense plans. GBI is a successor to the ERIS test vehicle.

- Endo/Exoatmospheric Interceptor (E<sup>2</sup>I)--A surface-based interceptor able both to intercept RVs outside the atmosphere, like the GBI, or to conduct terminal phase intercepts after the RV has reentered the atmosphere. Such an intercept is more stressful to the interceptor structurally and in thermal terms, but it simplifies the problem of discriminating between decoys and RVs. E<sup>2</sup>I is based on evolution of the HEDI test vehicle.
- Brilliant Eyes--A space-based sensor providing midcourse object tracking and discrimination in support of the intercept functions of Brilliant Pebbles, GBI, and E<sup>2</sup>I. It acquires and tracks RVs and contributes to attack characterization and executing adaptive flexible defenses. These space-based assets are particularly important to the effectiveness of all ground-based interceptor assets.
- Ground-Based Surveillance and Tracking System (GSTS)--A rocket launched sensor vehicle placed into a probe-type trajectory yielding several key minutes of time on station at the peak of an attack. This system would employ LWIR sensors to augment space-based assets in the accomplishment of early and directed attack characterization. A particular mission of this vehicle is to replace lost or disabled space-based sensors.
- Ground-Based Radar, Transportable (GBRT)--Supports all intercept and battle management functions within line-of-sight radar range. It acts as a hedge against enemy action against optic sensors. It gains survivability by virtue of mobility.
- Brilliant Pebbles (BP)--A highly autonomous vehicle that detects, acquires, and engages ballistic missiles in boost, post-boost and midcourse phases of the threat missile trajectory. BP contributes to threat warning and attack assessment, space surveillance, tactical data exploitation, and covert communications. It is a key element of the



distributed, decentralized battle management approach to GPALS.

- Patriot ATM--Greater capability against tactical ballistic missiles with lower RCS, higher terminal velocity, and higher angle of attack than can be defeated by contemporary Patriot PAC 1 and PAC 2 variants. Modifications include a multi-mode seeker with active Band radar, greater target handling capacity, and enhanced ECM capabilities. An upgraded fire control radar is also a part of this modification.
- ERINT-1--A test vehicle intended to demonstrate capability against a tactical ballistic missile. It involves eight test flights for intercept and destruction determination and one test to determine capability against air breathing threats.
- Theater High Altitude Area Defense Concept (THAAD)--A high endoatmospheric area defense interceptor for high altitude area defense against tactical ballistic missiles. Six acquisition flight tests are envisioned.
- Tactical Missile Defense-Ground-Based Radar (TMD-GBR)--Mobile, rapidly deployable ground-based radar intended to search for, acquire and track TBMs, provide timely launch warning and impact point prediction, and support all intercept functions.

Projections of SDI system acquisition costs for Phase I and its successor, GPALS, have declined markedly over the years. In June 1987 the Defense Acquisition Board Milestone I Review set Phase I cost at \$145.7 billion. The DAB reviews of June and September 1988 saw this figure decline first to \$115.4 and then to \$69.1 billion. The Phase I cost estimate was further reduced to \$55.3 billion in November 1989 and \$53 billion in November 1990 (FY 88 dollars). With the restructuring of the effort into GPALS, the November 1990 estimate declined further to \$41 billion (FY 88 dollars). Of this, \$32 billion reflects the cost of global or CONUS defenses with the remainder reserved for theater/regional capabilities. (Tactical ballistic missile defense program costs were not included in previous-year estimates.) SDI has been, and is projected to remain, a small percentage of the strategic forces budget. A program pace that yields deployable theater missile defense capability in the mid-nineties and global strategic capability around the end of the decade should not exceed annual spending levels of between \$1 and \$2 billion for TMD between 1992 and 2002 and less than \$500 million beyond that, and approximately \$6

billion for strategic defenses. Such an expenditure would put GPALS in place before the end of the decade.

### **3.3 DISCUSSION OF TECHNICAL CHARACTERISTICS.**

Discussion of the technical characteristics of GPALS opened with the question of a possible fall-back architecture for GPALS should the Congress not allow space-basing. The answer was that the job could be done, but it would require larger radars, more GBIs, a change in firing doctrine (multiple GBIs), would cost more, and would involve more risk. There would be less confidence in a single layer of defense than could be expected from a layered approach. An overriding technical concern would lie with the space-basing of sensors. In combat ground radars could be vulnerable. With space-basing a very long period of time would be needed for an enemy to seriously compromise sensor capability.

To protect NATO against tactical ballistic missiles, a ground-based system, like THAAD with cueing from space-based sensors, might be feasible with as few as four sites. These would be located far from the "front line." A few more sites might be desirable for insurance and to protect the island extremities of NATO Europe. Corps SAMS would protect forward. This system would also defend against aircraft.

### **3.4 ALTERNATIVES OR COMPLEMENTS FOR RESPONDING TO LIMITED THREATS.**

#### **3.4.1 Diplomatic Efforts.**

Concern was voiced that in the case of the ABM Treaty, there is no basis for a common understanding of the definition of "systems based on other physical principles." The issue is too complicated. Yet, the same participants felt that if a Soviet regime with which we can negotiate materializes, as existed when Schevardnadze was Foreign Minister, negotiations concerning missile defense should continue. While certain Soviets are reported to have spoken in support of modifying the ABM Treaty, these people were described as probably not speaking authoritatively. To find out what the Soviets really think, one needs to undertake consultations like those Secretary Baker has been pursuing. But first, the U.S. Executive Branch must make up its mind concerning the future of the ABM Treaty. That was seen as being the first hurdle. Most participants seemed to conclude this discussion with the opinion that a cooperative transition to mutual, thick ballistic missile defense systems is not a realistic subject for contemplation. It presupposes a complete reversal of U.S./Soviet relations. Modification of the ABM Treaty to permit limited defenses, however, may become feasible as the Soviet Union confronts the problem of ballistic missile proliferation.

Concern was voiced that the Soviet Union would employ arms control as the vehicle for blocking U.S. progress toward more effective strategic defenses. At particular risk is U.S. progress in space-based systems as the principal vehicle for cost-effective broad area coverage. The Soviets might be in a position to block fielding any ABM capability not based on ground-based interceptors, an area where the Soviets have long experience and have placed considerable investment. It may be necessary for the United States to cite supreme national interest, withdraw from the ABM Treaty, and proceed with GPALS. Some felt that the world has changed enough, in view of ballistic missile proliferation and risks of accidental or unauthorized launch, that such an action would be seen by allies as merited and unobjectionable.

#### **3.4.2 Counterforce Strikes.**

This discussion explored the potential for employing offensive counterforce operations to defend against limited ballistic missile strikes, whether intentional, accidental, or unauthorized. To what degree could such offensive action accomplish or complement the protective missions of GPALS? The entering assumption is that deterrence has failed. So, offensive action is not addressed here as a vehicle for producing deterrence, but as an option for protecting against damage.

Offensive counterforce action implies some level of preemptive or preventive action. The ballistic missile would be an obvious choice for a counterforce weapon because of its speed. But, effectiveness of offensive counterforce attack is heavily scenario-dependent. One would have to be confident enough of the warning one was getting to make the decision to take such an action, even in the case of reacting to a premeditated enemy attack. It would be impossible to use offensive counterforce action to forestall an accidental attack, and almost impossible to defend against an unauthorized attack this way.

#### **3.4.3 DETERRENCE OF THIRD WORLD THREATS (DR. KEITH PAYNE, EXECUTIVE VICE PRESIDENT, NATIONAL SECURITY RESEARCH, INC.).**

How valid is the notion that third party threats can be deterred? Arguments against Sentinel in the late sixties and GPALS more recently assert that Third World leaders are rational and can be deterred as the Soviet Union has been deterred. Opponents of GPALS argue that the likelihood of a Third World "mad man" is low, and deploying defenses for such a contingency would involve greater cost than is merited by the low risk.

The study of more than a hundred historical cases shows, however, that more is required to make deterrence work than rational leaders alone. For deterrence to function the parties involved must have rational decision-making processes, an understanding of the opponent's values and beliefs, effective communications, and a common perception of threats and thresholds. Given the rapid proliferation of advanced military technology, these prerequisites for effective deterrence would have to exist between the U.S. and numerous Third World countries. Yet, there is little prospect for the existence of such a high level of understanding between the United States and numerous Third World countries. Consequently, U.S. confidence in a policy of deterrence should not be high vis-a-vis the emerging missile threats posed by Third Parties.

Another part of the Third World deterrence problem is that we are trying to accomplish through deterrence more than we have in the Soviet case. In the past we have sought the direct deterrence of nuclear attack on the United States. We have also sought extended deterrence of attack on our allies. In the Third World case, in the absence of defenses, the United States would have to be capable of deterring Third Party use of ballistic missiles even if the United States was engaging that Third Party militarily on its homeland. Deterring ballistic missile use under such circumstances would be extremely difficult--it was not possible during the Gulf War.

If the United States is going to base its defense policy on the maintenance of a new world order through intervention, if required, in regional wars and conflict, it is going to have to protect its armed forces and to the extent possible ensure that such expeditions do not trigger an attack on the United States itself or U.S. allies. Deterrence of a third party's ballistic missile or NBC retaliation in the event of U.S. and allied intervention in a regional conflict would be extremely difficult. What we may be seeing is the beginning of a period where the United States needs, as never before, to combine deterrence and defense in the interest of preserving its power projection capabilities. Failure in this regard could threaten the U.S. position as a superpower, and compromise America's ability to support its allies and help underwrite international order.

### **3.5 DISCUSSION OF ALTERNATIVES.**

The events of the recent Gulf war generated intense discussion over various approaches to counter the emerging limited missile threats. "Failure" of deterrence in the case of Iraq may have occurred to some degree because the United States did not understand Iraq. Probably, even more

important, however, was Saddam Hussein's misunderstanding of the United States.

The importance of preemption was raised. Would the possession of relatively effective defenses prevent the United States from being deterred from intervention or preemption if necessary? Had the Israelis not preventively destroyed the Osirak reactor in 1981, would Iraqi progress toward nuclear weapons have deterred Desert Shield/Desert Storm? Do we need our own chemical weapons to deter CW use by Third World states?

The session closed with the historical observation that deterrence fails relatively often. While nuclear deterrence has not failed yet, we have just been witness to a massive failure to deter Iraq and a failure of compellance after August 2. Offense/defense integration should be seen as holding out the possibility of avoiding sole dependence on either offense or defense to support deterrence, and GPALS would provide a necessary safeguard in case deterrence is not effective.

## SECTION 4

### GPALS Program Status (Amb. Henry Cooper, Director, SDIO)

Ambassador Henry Cooper offered some general thoughts on the changing strategic defense environment and then responded to questions.<sup>4</sup>

He expressed optimism over the prospects for the Administration and the Congress to "get their act together" over GPALS. GPALS makes sense. Previous SDI goals had been perceived as being too ambitious, even though they probably could have been achieved. Now the limited defensive requirements under GPALS are perceived as bringing defensive objectives within our grasp.

Several major factors suggest optimism concerning GPALS' future. The various components of GPALS are scoped so that they do not exceed in cost or complexity many other defense investment programs seen as being more typical and less revolutionary. GPALS embodies a mix of strategic and conventional capabilities that track well with political changes in the world and future U.S. foreign and defense policy requirements. There appears to be significant acceptance on Capitol Hill for at least parts of GPALS among influential leaders, including Senator Nunn.

If the problem of accidental or unauthorized launch existed two years ago, it is clearly a bigger problem today given mounting Soviet political turmoil. Proliferation has become a much more evident threat, and, while diplomatic efforts have had some success, what success there has been demonstrates that it is all the more important to create defenses too. Over the last year or more an extensive review process headed SDI in the direction of GPALS. "GPALS thinking" was well underway long before August 2. The Gulf War provided an exemplary case study validating the conclusions of that review process.

The cause for optimism was greatly advanced this January. On the 18th of January the first Patriot ATBM intercepted a Scud aimed at Saudi Arabia--marking a successful first use of an anti-ballistic missile system in wartime. On the 28th ERIS completed a successful intercept demonstration with a kill vehicle weighing only 300 lbs. compared to the more than one ton weight of previous test vehicles. This is well on the way down to the envisioned 10-20 lb. size of operational space-based vehicles. Finally on the 29th the President announced GPALS and his support for it. This announcement followed shortly after the President was briefed on the concept. GPALS represents a new

operational goal and rationale, but it does not foreclose the possibility of the more extensive Phase I defense as a subsequent capability should exercising such an option prove necessary.

However optimistic one may be at this point, we still have to anticipate problems like those Patriot had from the project's beginnings in the sixties. Around 1972 its mission was changed from air and missile defense to pure air defense. In the early eighties the line was drawn to keep Patriot under the Army as the primary agent with SDIO focused on advanced technology. In 1983 Paul Warnke argued that a Patriot ATBM capability would violate the ABM Treaty. About the same time the Bell Labs study was saying that Patriot would not work.

There were only three PAC II Patriots in existence on August 2. A crash effort to produce them was successful, though for a time they were being used faster than they were being produced. The Patriots provided to Israel were of tremendous strategic consequence because they helped keep the coalition together. Lt Gen Horner pointed out how badly we had underestimated the political impact of the Scuds. By providing a defensive alternative to Israel and coping with a threat of unanticipated political impact, Patriot showed itself to be a strategic defense system of great significance.

It is clear that the defense/deterrence relationship is changing, and deterrence alone is no longer sufficient. As defenses take their place, it is important to find appropriate measures of effectiveness. Damage expectancy has long been a measure of choice for offensive forces. Finding appropriate ones for defenses has not proven to be easy.

It is important to address a cost/effectiveness argument that grew out of the Gulf War. A humorous account has one of Hussein's lieutenants reporting to him that the Scuds are proving remarkably cost effective--each Scud is destroying three Patriots. Unfortunately the humor in this tale also reflects the cost analysis acumen of those who try to relate the cost of the Scuds to the cost of the Patriots. The cost of countering Scuds was enormous, but that cost must be weighed against the value of the target structure that was protected and the lives saved by being able to keep to a war plan of our choosing, rather than one chosen by Iraq.

Political realities growing out of the Gulf War indicate that there will be a fight between Republicans and Democrats over who is going to do the most in buying theater defenses. Some of these same people will argue against strategic defenses. As much as one might try to attract attention of Americans to why the United States is more interested in

defending Tel Aviv than Washington or Huntsville, the average American will go blithely onward failing to comprehend that we do not already have such defenses. The debate is likely to go on "inside the Beltway."

Efforts to secure the needed resources for strategic defenses are likely to meet resistance on the part of those who claim that since theater or ATBM capabilities are easier to achieve, we should not start work on defenses against strategic missiles until we are done with ATBMs. ATBMs are easier to build, and will be ready earlier, but this is irrelevant to the need to start work on protection against strategic-range missiles.

Arguments against the space-basing of defenses have particularly heavy ideological overtones. There is less resistance to sensors in space than there is to weapons in space. While we originally thought of Brilliant Pebbles as a strategic system, its capability to intercept missiles of a few hundred miles range, and its low cost may give Congressional and other opponents cause for pause when they consider the Middle East tinderbox and the range of the ballistic missiles there.

Our investment strategy for theater missile defenses involves spending less than \$10 billion in 1988 dollars. \$22 billion would be spent for ground-based defenses of the United States, which includes Brilliant Eyes. \$10 billion would be dedicated to the Brilliant Pebbles space-based layer. We are looking at a program capped at \$6 billion per year in the out years, but we cannot sustain a program at the current \$3 billion level. It would not be a responsible program.

Some call for going to an ABM-Treaty-limited system first, and then going beyond if it turns out to be needed. Supporters of this approach need to be disabused of any idea that such a system could be useful. One cannot deploy a useful system of 100 ground-based interceptors in North Dakota.

Last year the Congress gave the SDIO five line items, but allowed it only to pursue research within the constraints of the "narrow interpretation" of the ABM Treaty. Looking ahead, the real issue is the space-basing of interceptors. The Soviets are probably not going to go along happily with this idea. We will have to unite domestically behind this idea into a strong movement that shows some muscle. Only this might impress the Soviets into listening to us. That would put us in a position to go so far as exercising our rights and withdrawing from the ABM Treaty.

Every Secretary of Defense in the future will want strategic defenses. We have strong leadership on the



acquisition and policy sides. General Powell and the JCS are also strongly supportive. High Level Group discussions and bilateral talks with the British, French, and Germans indicate that our allies are rethinking their views. The world situation is changing, and with it attitudes about missile defenses.

#### **4.1 DISCUSSION OF GPALS PROGRAM STATUS.**

Participants observed that the Hoffman Panel had advised the Secretary of Defense on "what it [the need for limited defense] was all about." Members of the Hoffman Panel had recognized that it would be very difficult to defend against a large Soviet attack. They also felt that it would be easier to defend against a limited attack, and that such defenses yield important military benefits. Fred Iklé was credited with initiating Patriot's ATBM capability. The Army was concerned about the ABM Treaty--as was the Navy in the case of Aegis. Our over-compliance with the ABM Treaty in this matter was noteworthy. This Scud-Patriot example sheds a lot of light on the "Nitze Criteria" for strategic defenses and shows how policy-strategy issues can overshadow budgetary issues.

Several participants noted that the United States is in a situation where lawyers have more to do with weapons design than engineers. While our negotiators never intended it, the ABM Treaty is being interpreted narrowly. This has cost time as well as money: for example, it has required the U.S. to pursue two experiments where one would otherwise have been sufficient. Even the GAO says we need to do full-scale testing. We should get clear about our objectives and build [BMD].

Several participants expressed the opinion that things are looking hopeful on Capitol Hill for BMD. Votes against SDI last year were cast based on a perception of a program that was at least a year out of date. The Gulf War experience with missile defense should help in this regard. The popularity of the President and the military as a result of the Gulf War, however, is a wasting asset. We need to be hearing more about strategic defenses from high up. Note that the President did not mention it in last night's (March 6 televised address to nation on Gulf War) speech. We need to hear about Brilliant Pebbles and its importance to theater defenses, and we need to hear more about how undefended the United States really is. We need to hear about how BP is effective against any missile that gets above the atmosphere, and how much cheaper it may be to defend Europe from space than with ground-based interceptors.

## SECTION 5

### ALLIED VIEWS AND ALLIANCE CONSIDERATIONS

There was a general perception of possible movement on the part of allies with respect to limited strategic defenses. From past ambivalence, if not more negative feelings toward SDI, there were some perceptions that support may be forming. There was clearly little interest before the Scuds started flying from Iraq. The environment is changing, however, and third party threats are rising in importance, particularly to France, Italy and Turkey. OSD has briefed the NATO High Level Group on the refocused program. Manfred Wörner seemed very excited about GPALS for NATO. Comments were presented from the points of view of four of the United States' closest allies. In no case did these comments represent an official statement of policy.

#### 5.1 FRANCE (MR. HENRI CONZE, FORMER CHIEF OF INTERNATIONAL RELATIONS, GENERAL DIRECTORATE FOR ARMAMENT, FRENCH, MOD).

The beginning of operations in Kuwait and Iraq on January 16, and the Scud attacks against Saudi and Israeli cities forced Western publics and governments to take note of the threat of ballistic missiles to any country within range. The West must, however, guard against the temptation to create a "COCOM" against the South. What is needed is a global solution to proliferation; a solution that can begin with economic and technological actions and then, if needed, progress to military measures.

The Gulf crisis yields three key ideas to be developed. First, proliferation is real and needs to be countered. Second, intelligence, being able to follow and understand what is happening in all areas of potential concern, is difficult for the Europeans who are not favored with the resources of the superpowers. How Europeans respond to GPALS and these issues will be shaped by the character of post-Gulf War relations between the United States and Europe. Many U.S. forces were pulled out of Europe to fight in the Gulf. Will they return?

Proliferation is real, and represents a defeat to those nations that have supported more or less formal agreements as barriers to such developments. Chemical weapons are available to any country willing to take the risks inherent in their fabrication. The spread of nuclear weaponry is controlled only by virtue of tenuous international control over the availability of weapons-grade fissionable materials. Biological weapons may proliferate rapidly in the future as the technical questions about how to control their effects

are answered. Finally, ballistic missile technology is now available to almost any state able to secure assistance.

Restricting the movement of these technologies poses complex problems. Stopping the flow of chemical weapons faces the challenge of distinguishing between them and agricultural chemicals essential to even subsistence farming in much of the Third World. Limiting the movement of nuclear or biological capability is the problem of a handful of western powers, the Soviet Union, and China. This is a difficult challenge to cooperative action--remember how President Kennedy's refusal to help France stimulated France's investment in its autonomous weapons capabilities. A pure interdiction effort will not work. France's policy of cooperation with its former colonies not only has the effect of contributing to the economic and social preconditions of stability, but it may also serve to help bolster these regimes against the military threats of neighbors without recourse to proliferating technologies. (A GPALS-type system may similarly help in this regard.) It is important that Europe does not make itself look like a protected, closed fortress. That would be counterproductive.

President Mitterand has announced the beginning of a sweeping security debate in France. Defensive systems and proliferation are to be among the subjects treated. Nothing can be expected to be effective in this area without international cooperation, first on the European level. Cooperation on the Atlantic level is also strongly to be desired. Ultimately, the concept for a successful anti-proliferation policy should have four legs: a technology transfer control policy, an economic assistance and development program, offensive military capabilities to counter the tactical ballistic missile threat, and finally, defensive capabilities.

Proliferation and the experience of the Gulf War confront Europe with a departure from the strategic framework to which we have accustomed ourselves. How valid is deterrence in the new context? While a Soviet military planner may be sensitive to economic factors, Saddam Hussein has just demonstrated that he is not. Indeed, with his bombing of non-military objectives he may have sought the status of martyr.

If one can not be confident of deterrence, one must consider defenses. France always stayed very leery of SDI deployment. It appeared in the past to be aimed at forcing an adversary to increase his offensive forces in order to be sure of penetrating. Now the problem for France is one of protecting its vulnerable population centers along the Mediterranean Coast. Disunion within the USSR presents the additional risk of unauthorized or accidental attack. The

Patriots showed the utility of active defenses to deal with such limited attacks.

In the European context, any defenses require resources that can only be the product of international cooperation. As we learned from the lesson of the Maginot Line, however, defensive measures do not work alone, but only with an appropriate offensive capability. Here too, European cooperative efforts and the power projection capabilities of the United States need to be considered before a stable situation can be created.

At the same time the questions of competition in arms sales to Third World clients must be resolved. A balanced approach is needed.

A European response to proliferation must be hammered out in common. The Europeans need to work out their security future independent of outside pressures. It is tempting to fall back on support from the United States. Indeed, the United States made this even more tempting by virtue of its recent coalition leadership. While that leadership showed itself to be effective and reliable, what happens if the next conflict appears too minor to the Americans to justify their intervention? This is a political rather than a military issue, but it gets to the essence of why, with regard to proliferation as with other defense challenges, Europe must have the means and freedom of action to be a coequal defense partner with the United States.

The end of this year and beginning of next year look like a real window of opportunity for beginning an effective cooperative approach to countering proliferation.

**5.2 UNITED KINGDOM (MR. GERALD FROST, DIRECTOR, INSTITUTE FOR EUROPEAN DEFENSE STRATEGIC STUDIES).**

Outside of official defense circles there is little British awareness of the recent refocusing of the SDI program. The Gulf War may have a dramatic affect on attitudes in this regard. When a debate on the subject does take place, it will be against a backdrop of extraordinary change and uncertainty. Such conditions will be far more propitious for the prospects of European support for GPALS than was the case when President Reagan made his "Star Wars" speech in 1983. SDI was then seen as disrupting a stable relationship, replacing tried and tested nuclear deterrence; now GPALS may be so timed as to be seen as a source of insurance and stability in the face of the risks of a fast-changing and newly unpredictable world.

Europeans have been spending less on defense and have been perhaps over eager to cash in on the peace dividend just

when the United States seems determined to reduce its presence in Europe. Relations between the West and the USSR are cooling as the Soviets battle ethnic and national unrest and economic chaos to save their empire. It is becoming clearer that whatever the outcome of Soviet domestic difficulties, whatever remains of the Soviet empire will continue to be the preeminent military power in Europe. The Soviets are also seen as being likely to pursue force modernization regardless of arms control or economic pressures.

The spectacular success of the Patriot in the Gulf War combined with the more modest scale and ambitions of GPALS, compared to SDI, have diminished the force of the claim that anti-missile defenses are not reliable. They also undermine the argument that even if they work, they can not yield a useful strategic and political return.

The relatively more modest costs of GPALS are not likely to be seen as a threat to U.S. spending for European defenses, as was the case for SDI. While U.S. spending for Europe may be reduced, this is not likely to be seen as a function of increased spending on an SDI follow-on.

GPALS does not appear to have the same ideological resonance as SDI, which became a casualty of a left-right argument. SDI was seen to undercut the ethical basis of deterrence founded on the threat of massive retaliation. Coming on the heels of the struggle to deploy Pershing and GLCM, the timing of the announcement of SDI was a blow to western leaders who had gone farthest out on a limb for the United States. GPALS is supported now more in terms of prudence and common sense. Those in the United States who are seeking to win support for GPALS would be well advised to maximize the differences in conceptual and presentational terms between the two programs--emphasize that GPALS is not SDI.

Since the Soviets publically criticized SDI as an attempt to field a first strike capability, the program was said to be "destabilizing." This criticism cannot be leveled against GPALS; a point that also should be emphasized.

The Gulf War brought home to British public opinion the reality of the threat of Third World states armed with modern weapons, even weapons of mass destruction. The future holds the potential for a nuclear-armed Saddam Hussein. GPALS may provide a measure of insurance against such risks.

Political unrest in the Soviet Union is likely to continue, with the struggle between the center and the republics taking a more extreme form. Under these conditions the likelihood of accidental or unauthorized launch

increases. This point too will be appreciated by the British public, if perhaps less so by government officials.

In addition, GPALS is unlikely to be taken as a signal that the United States is retreating behind a nuclear-proof carapace, as was the case with SDI.

Anxiety over breaching the ABM Treaty should be reduced because the public perception of the military threat has faded. Political leaders are no longer under the same pressure to produce new agreements or treat existing ones as sacrosanct.

Finally, for those seriously interested in maintaining the value of U.S. nuclear guarantees to Europe, the prospects that GPALS holds out for providing options that can, in case of need, be expanded to protect against a full scale Soviet first strike, are reassuring. It represents one of the few things which could give future meaning to present U.S. nuclear commitments.

### **5.3 ISRAEL (DR. DORE GOLD, JAFFEE CENTER, TEL AVIV UNIVERSITY).**

There does not yet appear to be an official Israeli position on GPALS. There are a number of factors, however, that might affect Israeli views on GPALS.

- There is still a significant contemporary missile threat to Israel. It could be even more serious than that presented by Iraq. Syria has the more accurate SS-21s. They also have big-payload Scuds, unlike Iraqi Scuds with lesser payloads, reduced for the increased range needed to reach Israel. Libya appears to be working toward a 1000-km. range missile, which further increases the threat.
- The Iraqi threat looks like it has been crushed. Yet, Israelis have seen the resurgence of a "once-crushed" threat (Egypt and Syria between 1967 and 1973). Iraq can come back. Iraq has oil revenues and a large population. Many Israelis advocate "supply-side" arms control, but the number of weapons out there and the tendency for other Arab players to cooperate with Iraq if Saddam Hussein is removed will grow.
- With the poor performance of the Iraqi Army, and the absence from the field of its air force, the only successes Saddam Hussein can claim are his missile attacks on Israel. Iraqis can say that they struck Tel Aviv. In certain parts of the

Arab world, this strikes a resonant chord. The psychological impact of ballistic missiles was unanticipated in its gravity. Saddam needs to be definitively beaten before he develops nuclear weapons. For him the possession of nuclear weapons means that he can effectively deter U.S. force projection in the theater.

- Ballistic missiles with conventional warheads are not decisive instruments of war. Kuwait was both vanquished and liberated by ground force action.
- Israel is up against stiff resource limits. Had Israel not received missile launch warning from the U.S. the entire population would have had to have been kept in shelters for the duration of the conflict.
- There is a risk of people learning the wrong lesson from the presence of U.S. Patriot crews in Israel. However much the work of the U.S. crews was appreciated, Israel remains absolutely determined to ensure its own defense.
- The amount of damage caused by Scud or Patriot debris resulting from the missile battle indicates that enhanced defenses will be required in future conflicts.

How might these factors be seen as affecting Israeli perceptions of GPALS? There are two types of concerns. First, missiles are seen as support for the conventional battle. At the beginning of any war Israel is vulnerable in a way that is not true of its Arab neighbors. Three quarters of the Israeli Army must be called up to active duty within the first 48 hours. Missiles threaten to extend that call-up period or even neutralize it by striking "POMCUS" locations. Missiles may also affect the Israeli Air Force at this most crucial beginning-of-the-war part of their operations. This makes point defenses important to Israel.

A second source of concern is the threat of missiles fired at cities. This too has a potentially serious impact on mobilization. It also provides, as in the case of Saddam Hussein, a system capable of generating a certain "prestige" on the part of an Arab attacker. Finally, it provides a political problem in the sense of enabling distant enemies such as Iraq or Libya to attack Israel, even while accommodations may have ameliorated relations between Israel and its more proximate Arab neighbors.

In conclusion, Israel will need an anti-missile system capable of dealing with short-range missile threats. This

will probably have to be something capable of dealing with any threat below the 600 km. to 800 km., in the lower range limit of Brilliant Pebbles. Arrow may be ready in time. The existence of GPALS (Brilliant Pebbles) could add a valuable layered capability in the 600 km. to 800 km. range band and beyond.

Missiles are destabilizing elements in an already unstable region. The implications of being able to neutralize them would have a very positive influence for greater stability throughout the region.

**5.4 GERMANY (MR. MANFRED BRAITINGER, DIRECTOR, MISSILE DIVISION AND EXTENDED AIR DEFENSE, INDUSTRIE ANLAGEN BETRIEBS GESELLSCHAFT).**

Up to now there is no European foreign policy, only the remnants of national policies. With all the recent changes, and Germany having been reunited last year, it has been too hard to draft definitive new policies. To this point Germany has been purposefully embedded in NATO. This was particularly true with regard to German air defenses. Serious political-military thinking will have to take place before Germany can adjust its security relationships to a new European context.

Up to two years ago Germany faced perhaps the West's most serious defense threat on its eastern border, greater even than Israel's from Iraq. Germany confronted the threat of hundreds of Scuds and multi-wave attacks by scores of Soviet divisions over a period of 30 to 40 years. The threat against air bases in Germany was particularly serious. This resulted, at the time of President Reagan's call for SDI, in Manfred Wörner's call for the Extended Air Defense Initiative. Remember that Germany was particularly aware of the missile threat--it was Germans who within the memory of many had first used such weapons (V-1s and V-2's) against the Allies in World War II.

It is crucially important to understand the magnitude of the changes affecting the central region and public opinion within it. There have been massive demonstrations and political turmoil. The feelings manifested on INF were indicative. There were demonstrations against Pershing--not against SS-20s. The demonstrators, however, accepted "Extended Air Defense." The INF Treaty eliminated SS-20s, SS-23s, and SS-12s. INF did not eliminate the huge force of Scuds that can threaten civilian targets. The feeling now is that the Soviets will be leaving Eastern Germany within the next four or five years, and will take their missiles with them, so why do we need an ATBM capability?

The thinking public, however, does not believe that the threat has gone away. They recognize that the War in the



Gulf involved the most benign conditions for defending against Scuds--long warning time, small attacks, highly localized targets to defend, no ECM, little interaction with other operations, and modified Scuds with lower payload, longer time of flight. In a central front war none of these would be true. For defenses to be effective, we would need significantly improved ATBM systems in the field and more of them, as well as provisions for dealing with air-to-surface missiles as well. Trying to deal with such threats by point defenses rather than area defenses may no longer be possible. Command and control would be a big problem. There may be trouble going beyond existing NATO arrangements for air defense. GPALS may alleviate those concerns to some degree. Nevertheless, concern exists that Colorado Springs might be running NATO air and missile defenses.

Reunification and the removal of the most immediate threat are significant factors. We must wake them up to the fact that Germany has a new role and must participate in developing new European defense systems. The Greens are the only ones still protesting this conclusion. We need to develop a concept that communicates what could happen in a future conflict in Europe. For studying such contingencies, we need to see the threat as it is. The future should bring these ideas to those in parliament. We have a good chance of changing European thinking on defense. Under these conditions GPALS has a good chance of finding European support.

#### **5.5 DISCUSSION OF ALLIED VIEWS.**

Subsequent discussion explored the impact of GPALS on the Middle East and Europe. The degree to which Israeli ATBM capabilities would exacerbate relations with countries like Egypt was a prominent subject.

Several participants noted the likely French and British concern over the possible impact of GPALS on their own nuclear deterrent forces. The French participant responded that much of France's concern over SDI had been less in terms of its effect on the French offensive capability than in terms of its encouragement of Soviet offensive force growth. The issue of GPALS' potential affect on European decisions to modernize their offensive nuclear forces was broached. Here the response was that GPALS would encourage greater European cooperation, and since GPALS was widely perceived in Europe as an "anti-Southern" capability, it should have little effect on continued modernization of forces designed to preserve deterrence against the remaining threat from the East. Note was also taken of the greater sense of urgency in Israel's quest for ATBM capability and southern Europe's concern over Third World threats, in comparison to that manifested in northern or central Europe.

Generally, participants felt that the political situation across Europe would be more favorable to consideration of GPALS-related proposals than they have been in the past. Similarly, the closer GPALS can be kept to normal patterns of NATO decision-making and program management, the more acceptable it is likely to be.

## SECTION 6

### THE SOVIET DEBATE CONCERNING MUTUAL BMD DEPLOYMENT (DR. KEITH B. PAYNE, EXECUTIVE VICE PRESIDENT, NATIONAL SECURITY RESEARCH, INC. AND DR. DANIEL GOURÉ, DIRECTOR, COMPETITIVE STRATEGIES OFFICE, OFFICE OF THE UNDER SECRETARY OF DEFENSE [POLICY])

The Soviet view of BMD is a key policy issue with regard to GPALS deployment. The ABM Treaty of 1972 prohibits the deployment of significant ABM defenses by the United States and the Soviet Union. To date, the Soviet Union has been adamant about maintaining the ABM Treaty. There is now, however, an ongoing debate within the USSR on this subject. While some maintain that this debate is trivial, others think it is in fact quite serious. Some Soviet commentators suggest, for example, that a compromise on BMD deployment could be part of START II negotiations.

There have been approximately 25 articles from the Soviet press endorsing mutual BMD deployment beyond the ABM Treaty since mid-1989. This is different from the 1983-89 period, when there was unanimous criticism of U.S. BMD, and a complete unwillingness to consider a cooperative mutual deployment. Now, more favorable opinions have been observed throughout a broad range of political, military, and bureaucratic positions. Although the official Soviet position remains opposed to strategic defenses beyond those permitted by the ABM Treaty, a real debate on BMD is taking place. The motivation for renewed interest in BMD has been expressed in the recent Soviet literature.

Ballistic missile proliferation in the Third World appears to be the primary reason for Soviet interest in reconsidering BMD. Both purposeful and accidental/unauthorized strikes from the USSR's southern neighbors are a concern. This rationale is very complementary to that of GPALS.

Second, some Soviet officials appear to believe that the United States will, over the long term, deploy defensive systems. Consequently, the Soviets propose to negotiate BMD deployments under an arms control rubric in order to maintain some leverage over U.S. BMD efforts. Finally, some Soviet writers endorse missile defense as an element in a broader move toward a more "defensive military doctrine." This is, however, a minor theme in Soviet writings.

Regarding the force structure implications of the Soviet statements, it appears that the Soviets are not interested in space-basing of interceptors; articles have supported ground-basing (only) of interceptors. The Soviets might have some interest in an amendment of the existing ABM Treaty to permit

additional BMD sites and interceptors. Ground-based deployments mentioned in the Soviet press include such numbers as 200 and 1000 defensive interceptors. Only two articles mentioned space-based weapons favorably.

The apparent Soviet position is that they may accept a limited number of ground-based interceptors to counter limited threats, without affecting the overarching U.S.-Soviet nuclear standoff. Points on which the Soviet position is ambiguous include: the question of space-basing for components other than interceptors; and development and testing of space-based interceptors.

Prospective negotiating sticking points in any START II/BMD compromise include the space-basing of interceptors. They might be permitted, limited, or prohibited; at least as likely, the issue will be put off for a few years before it is addressed. Development and testing of space-based interceptors, the number of test satellites, the number and distribution of ground-based interceptors, the issue of SAM upgrades, and the issues of numerical quality versus symmetrical capability for the sides, are all likely to be tough problems. A key point is that the level of apparent Congressional support for GPALS will have a direct impact on U.S. negotiating leverage during any renegotiation of the ABM Treaty.

An example of Soviet endorsement for expanded missile defense is the recent statement of Viktor Alksnis. Alksnis is a founder and leader of Soyuz, a hard-line faction in the Congress of People's Deputies, representing about 20-25% of the deputies. Alksnis has commented favorably on limited SDI deployments:

I am increasingly leaning toward the point of view of the Americans who, according to the information available to me, are primarily designing this system as a defense against an accidental nuclear attack...Iraq already has a nuclear bomb. It looks like Israel has already created one, as well as the Republic of South Africa. Brazil has now suspended development; however, all of such work is under way. Will we not need to create our own SDI in order to rule out the possibility of a strike against Soviet territory by, for example (I would not like to predict this), Iraq if the situation is aggravated?<sup>5</sup>

Despite such statements it should be recalled that the Soviet Union has not yet changed its position with regard to BMD. Nevertheless, the current Soviet debate on BMD is real. Is it significant? Should we pay attention? Those who argue that it is not significant should know that it is difficult

to say who, if anyone, is completely or partially in charge of the Soviet Government. There is an ongoing power struggle. Consequently, it is difficult to render conclusions about the significance of any particular position on internal debate.

The significance of the current doctrinal debate in the Soviet system is power. In the U.S.S.R., doctrinal control leads to resource control. Doctrinal debate is occurring in the context of political upheaval, with ongoing competition over who has the most influence or control over Gorbachev, etc., along with a military reassessment that began in the early eighties with Ogarkov's comments on advanced weaponry. There is also a technical revolution, economic crisis, and geopolitical shift. Gorbachev sought to dominate the doctrinal debate by attacking its core: threat assessment. He negotiated agreements with the West which had the effect of reducing the Soviet assessment of the threat.

BMD is just one important part of the rich ongoing debate in the USSR on virtually all aspects of military power. The BMD debate has taken on a vitriolic quality, as seen in the rhetoric of the Arbatov-Akhromeyev dialog. The sources of the new thinking are significant: the Ministry of Foreign Affairs, and the military. The backdrop of this is the political struggle between Foreign Ministry and the institutes, on one hand, and the Military on the other. As to the question of why these individuals are writing these articles, we must recognize that people usually write at the instigation of higher-level audiences. Few people want to chance sacrificing their careers by basing their writing, à la Sakharov, only on their own beliefs.

Soviet military doctrine has been changing since the early 1980s. The changes are based on two phenomena: The understanding that further increases in nuclear capabilities yield declining marginal returns in utility, and the explosion of advanced technologies. The character of future wars are expected to involve limited campaigns, an enlarged scale of military operations, increased use and importance of surprise, short duration of fighting, enhanced role for maneuver, and the need for immediate fire and air superiority. There is likely to be no "front" and "rear;" rear areas will need defense. Soviet Major-General V. Ivanov is quoted as saying that:

...the existing strategic Rocket Forces, units and formations of the Air Force, the Navy and the PVO and PKO that have nuclear delivery systems [will] be united into Nuclear Forces, and also Space Forces--units and formations, equipped with the means to strike targets from space...

Desert Storm will be used by conservatives as a massive club against Gorbachev and in arguments for new weapons. The importance of the Battle of the First Salvo, and of reconnaissance-strike complexes, will be argued. For the Soviets, Desert Storm proved two things: That the new revolution in military affairs is real, and that the Soviets aren't participants, yet. Part of the revolution will include defenses, including missile defense.

There are a number of schools in the BMD debate, ranging from one advocating no change in current practices, through one accepting mutual BMD as "stabilizing." The schools do not disagree on technical issues, i.e. the feasibility of BMD; rather, they differ on conceptual and political concerns such as how to fit BMD into evolving doctrine; how to fit doctrine into the changing geostrategic situation; and how to maintain controls over the process of the shift toward greater emphasis on defenses, particularly vis-a-vis the United States.

In summary, there is a debate on strategic defenses in the USSR. More important, the Soviet doctrinal belief system is in flux. There are significant actors and authors in this debate. It is being carried on by people who are serious, and it reflects disorders in the Soviet decision-making system as well as changing geopolitics.

## SECTION 7

### GPALS AND POLICY IMPLEMENTATION

[The formal presentation under this title is reported separately.]

#### 7.1 DISCUSSION OF GPALS AND POLICY IMPLEMENTATION.

One participant commented that the next steps in offense-defense integration policy development and guidance apparently will emphasize theater issues. Analysis will seek answers to questions concerning the integration of counterforce and defense; analysis of Desert Storm will facilitate some progress on these issues. The strategic side is a more difficult question. How to balance strategic offense and defense poses numerous basic questions and competing interests.

Another participant suggested that CFE might be "dead." In that case the United States probably would not ratify a START agreement. Such circumstances might offer a unique opportunity to press for strategic defenses, on grounds that arms control is anachronistic. The consensus was that if Gorbachev does not overrule the Soviet military on Article Three of CFE, we may not even conclude a START agreement, let alone ratify one. There might be an opportunity to press for defenses here. It will be necessary, however, to get beyond the past SDI debate--protection against a large Soviet attack--and toward GPALS, which has been shown to be necessary by Desert Storm. The impact, however, of throwing into the legislative-executive hopper the issue of the ABM Treaty, with all its "theological" issues, is difficult to assess.

A member of the audience observed that here has never been a better time to pursue BMD, because the President, the military, and technology are all very popular. Still, the fact that GPALS has a space-based interceptor means that there will be great problems with the Congress. Many on the Hill will strongly endorse TMD, but will not support a space-based missile defense component. Space-based weapons will also not receive Soviet support.

While we will be in space with sensors, the issue is space weapons. GPALS cannot be entirely ground based because of the large geographic area that must be defended. Ground-based systems provide only limited area coverage. Space at some point becomes a very attractive way of dealing with the problem, because space-based interceptors can provide global coverage. Looking at the ranges (and resultant wide-area coverage) of projected missiles in the year 2000, it is hard

to consider dealing with the threat in any way other than from space.

In response to the suggestion that currently there are no military requirements encompassing space-based systems, there was agreement that there is a time lag in appreciating military requirements. For example, Patriot had tremendous strategic impact on Desert Shield/Storm, but on the first day, the commander of Desert Shield said no to Patriot deployments. Another participant noted that military establishments are not equipped to ask for revolutionary systems, and that Brilliant Eyes may be one of those revolutionary systems.

Is offense-defense integration a first step to more effective defenses against third parties or something to guarantee our carrying out traditional missions à la SDI's Phase I? The technical problems that must be solved in deploying GPALS are the same as require solution to deploy Phase I. If Third World threats become more challenging or if the Soviets become more threatening, larger U.S. defensive deployments will be possible. The Soviets will consider this possibility, and will be concerned that GPALS could be the first step on the way toward large-scale defenses that may ultimately jeopardize their retaliatory capability. Consequently, it will be important to pursue GPALS in agreement with the Soviets as a means of "reassuring them" concerning GPALS capabilities and U.S. intentions.

Regardless of whether the Soviets are behind or ahead of us technologically, the Soviets are at a structural disadvantage with regard to space-based defenses. Satellite constellations are denser at the poles than at the Equator, by a factor of four. Since Soviet missiles are based at more northerly latitudes than are ours, they would face a greater concentration of satellites than ours would. Also, our boosters burn out faster than theirs, making ours vulnerable for a shorter length of time in the boost phase.

One participant suggested that the services should be brought more solidly on board early on regarding plans for SDI systems. The lack of a JCS "Red Stripe" makes it possible that, as in 1983, everyone will play catch-up with SDI plans, by which time the concept, as in 1983, might be defeated on the Hill. Many military techniques were first used by others. The last thing we would want is for the USSR to use a technology that we develop.

## **7.2 CONGRESSIONAL VIEWS REGARDING GPALS.**

The overarching thought in this area is that there may be a good chance for executive-legislative consensus on the issue of GPALS. It should be remembered that the SDI originated in the White House with no Congressional



involvement. As late as 5:30 pm on the evening before President Reagan's "Star Wars" speech in 1983, responsible Administration officials were still insisting to key Republican Congressional leaders that "they had nothing up their sleeves" in the following day's speech. GPALS needs to be presented to Congress in a more open manner.

Recently, at the President's invitation, Congressional leaders have visited the Middle East and seen the impact of Scud attacks and the effectiveness of the Patriot. They were impressed with how effective the Scuds are in spite of their cheap construction.

In this regard, Senator Warner introduced legislation in the form of the Warner Sense of Congress on Ballistic Missile Defenses Amendment.<sup>6</sup> Although subsequently withdrawn, this amendment was intended to force the issue of balancing GPALS research and ABM Treaty restrictions. It responded to concerns that the research accomplished under SDI is rendered less efficient and more expensive because of ABM Treaty restrictions. It also responded to the perception that the U.S. should either seek to amend the ABM Treaty or, if need be, withdraw from it. There does not appear to be any near-term likelihood of getting to the point of withdrawal. Nevertheless, the U.S. need to pursue adjustments to the Treaty should be "backstopped" by an implicit threat to withdraw--for the purpose of negotiating modifications with the Soviets.

The general reaction to the introduction of this amendment among Senator Warner's colleagues was for the most part characterized by silence. Missile defense is seen as an "inside the Beltway" decision. The fact that the American public has just been confronted with weeks of Scud missile attacks and Patriot interceptions on network TV may create an opportunity to move this issue to the public, a public largely unaware that the United States has never possessed a territorial missile defense capability.

Great interest was expressed by participants from Capital Hill for a clear, readable presentation of about facts about GPALS and its rationale.

## SECTION 8

### **GPALS AND ARMS CONTROL (DR. KATHLEEN BAILEY, VICE PRESIDENT, NSR AND DR. STEPHEN CAMBONE, DIRECTOR, STRATEGIC DEFENSE POLICY, OASD/ISP)**

The workshop moved next to explore the potential effect of GPALS on the arms control process. GPALS was presented as having the potential to become an essential element in future arms control agreements. The speaker focused on the potential role of GPALS in an arms-control-centered peace structure for the Middle East. This proposal accepted the idea that defeating the Iraqi military does not end the problem of advanced military proliferation in the Middle East, and recognized the facts that there are other regional proliferants and that Iraq can revive its military power. On the other hand, as a result of the Gulf War there will be momentum for a solution to the problem of regional weapons of mass destruction, and proliferating missile delivery systems.

The speaker proposed a Middle East offensive missile ban and GPALS deployment as an effective step in response to the problem of proliferation. This would ban INF and shorter-range missiles, call for a sharing of missile defense capabilities, and provide oversight of space programs to preclude their evolving into military threat technology. Such an argument would eliminate the offensive missile systems of six countries. The traditional "haves" versus "have nots" argument by Third World States (i.e., Third World countries reject limitations while the superpowers' arsenals are not limited), would be blunted because the superpowers have already destroyed their missiles in this category. Moreover, verification of this size missile is easier than smaller systems such as cruise missiles. This proposal recognizes that shorter-range systems are a greater threat in this part of the world than they might be in some other areas because countries are geographically small and their capitals are located close to borders. There are many different short-range systems and many suppliers. The technology is not too complex. This proposal would include a ban on any missiles over 100 km. range.

The speaker observed that this proposal does contain problems. It is difficult to verify smaller, short-range missiles. Even INF-range missiles are difficult to verify when mobile basing is used. There may be undeclared stockpiles. Extra-regional threats cannot be excluded from affecting the area. Finally, space launch vehicle technology must be monitored closely to keep it from evolving into military weaponry.

These difficulties suggest why the deployment of missile defense is an essential element in this proposal. Given the

problems identified above GPALS-type defensive capabilities offer both possible incentives for arms control and reassurance for participants. If one were to institute such an arms control regime and then provide GPALS' protection for all participants, there would be a most significant hedge against breakout, cheating, or the adaptation of space-launch vehicles.

While there are many reasons why this regime would be difficult to negotiate and complex to put into force, it has potential. It would allow the arms control effort to focus on the missiles of Third World countries, and specifically missiles rather than warheads. Models already exist in the form of the INF regime in Europe, combined with the GPALS concept now taking shape. What problems remain would certainly appear to be more tractable than those now confronting alternative measures to address the problem in the Middle East.

Discussion on this proposal questioned a number of its inherent assumptions and specific details. The participants, however, generally accepted the idea that GPALS and arms control should be considered together in response to the problem of proliferation in the Middle East.

Concern was expressed about not focusing more anti-missile attention on China. China was seen as being far from a solved problem in terms of ballistic missile proliferation.

## SECTION 9

### DETERRENCE IN A MULTIPOLAR WORLD (DR. JACK D. CROUCH, II, PRINCIPAL DEPUTY ASSISTANT SECRETARY OF DEFENSE, INTERNATIONAL SECURITY POLICY)

Preserving deterrence in a multipolar future presents a major challenge to traditional offensive-force-based deterrence. Two aspects of this challenge are the diminishing Soviet threat, on the one hand, and regional instability, on the other. Added to this are strategic force objectives and characteristics for the 1990's, and new paradigms and force analysis tools, all of which create uncertainty.

The Soviet threat diminishes--or does it? The perceived Soviet threat is fading, but the massive and increasingly modern Soviet offensive strategic nuclear forces remain. Based on optimistic perceptions, the rationale for U.S. strategic nuclear modernization programs is being undermined.

At the same time, there is increased geopolitical uncertainty and instability. The long peace of 1945 to 1990 has been tied to the discipline of a certain bipolar order. You knew your enemy, but now that order and source of confidence in deterrent is gone.

With the current situation in the Soviet Union, there is a tremendous degree of uncertainty: it is not clear where the process of change in the Soviet Union is leading. The conventional threat has diminished; the strategic nuclear threat has not, and the political dimensions of the situation appear to be in flux. For example, how do we consider the prospects of bringing former Warsaw Pact members into NATO?

Regional instability is growing. Regional military restraint is evaporating. Proliferation of advanced technologies raises the stakes of instability. Traditional "Western-logic-based" deterrence seems unsuited for protecting against regional threats in every case. The threat to the United States and its allies from Third World nuclear, chemical, and biological weapons and the missiles may increase because deterrence battles are won in the minds of potential enemies and the U.S. does not understand Third World leaders sufficiently well to place great confidence in deterrence. We need to know our enemies better.

What should the United States be doing to be shape its strategic forces for the 1990's? How can strategic force objectives be defined that can accommodate both increasing demands and decreasing resources? While deterring the Soviet threat, we have to ensure U.S. power projection capability, protect our friends and allies, contribute to "general"

deterrence, of adversaries like Saddam Hussein, and types of conflict like chemical warfare. Deterrence in this context is problematical; one can not be confident that it will "work" in many future possible contexts.

With the proliferation of ballistic missile technologies, the United States might risk finding itself deterred from power projection activities. Ballistic missile defense may prove to be a prerequisite for U.S. expeditionary freedom of action. Eventually U.S. power projection into Eurasia will require effective integration of theater, strategic, and space-based defenses. If the United States is going to lead coalitions, like the one it recently led in the Gulf War, it will have to protect the coalition states and their forces. Great powers in the future will have to provide the capability for "extended protection."

In this context, we need to work harder to understand better how to measure deterrence, particularly in relations between the United States and Third World countries. New paradigms, new tools, and new ways of observing will all come into play. The new revolution in military affairs is now reaching the policy-making level. While regional conflicts may be limited in geographic scope, they are not going to be limited in intensity. And the geographic scope of regional wars will expand as the proliferation of advanced military technology proceeds. What we have been seeing is strategic war waged within one region. While GPALS stands alone as a potential operational capability, we need to understand more fully how GPALS contributes to the general strategic situation of the United States and its allies.

**SECTION 10**  
**LIST OF REFERENCES**

<sup>1</sup>President George Bush speaking at the Raytheon Missile Systems Plant, February 15, 1991.

<sup>2</sup>Secretary of Defense Richard Cheney, address to the American Enterprise Institute Forum, February 21, 1991.

<sup>3</sup>Taken from a speech at a meeting with students of the Higher Institute for Applied Sciences at the Great al-Fatih University, April 18, 1990, Tripoli Television Service, April 19, 1990 (translated in Foreign Broadcast Information Service, Daily Report: Near East & South Asia, FBIS-NES-90-078, April 23, 1990, p. 8.

<sup>4</sup>For details see Ambassador Henry Cooper, Director Strategic Defense Initiative Organization, and Honorable Stephen J. Hadley, Assistant Secretary of Defense, International Security Policy, Briefing on the Refocused Strategic Defense Initiative (Edited Transcript), 12 February 1991, in the supplement to this report.

<sup>5</sup>Lt Col V. Alksnis, Speech before the October 15 meeting of the USSR Supreme Soviet. Literaturnaya Rossiya, November 12, 1990, pp. 18-19.

<sup>6</sup>Text of the amendment, introductory remarks, and legislative history information including floor debate are included in the supplement to this report.

## DISTRIBUTION LIST

DNA-TR-91-129

### DEPARTMENT OF DEFENSE

ASSISTANT SECRETARY OF DEFENSE  
INTERNATIONAL SECURITY POLICY  
ATTN: NEGOTIATIONS POLICY  
ATTN: PRINCIPLE DEP ASSIST SEC  
ATTN: STRATEGIC FORCES POLICY

ASSISTANT TO THE SECRETARY OF DEFENSE  
ATTN: EXECUTIVE ASSISTANT

DEFENSE INTELLIGENCE AGENCY  
ATTN: DB-2  
ATTN: DB-3  
ATTN: DB-6  
ATTN: DB-6 COL ANDERSON  
ATTN: DI-5  
ATTN: DT-1  
ATTN: LIBRARY

DEFENSE NUCLEAR AGENCY  
ATTN: DFRA  
ATTN: NANF  
4 CYS ATTN: NASF  
4 CYS ATTN: OPNA  
ATTN: OPNS  
ATTN: RAAE K SCHWARTZ  
ATTN: RAEE  
ATTN: TDTR  
2 CYS ATTN: TITL

DEFENSE TECHNICAL INFORMATION CENTER  
2 CYS ATTN: DTIC/FDAB

DNA PACOM LIAISON OFFICE  
ATTN: DNALO

FIELD COMMAND DEFENSE NUCLEAR AGENCY  
ATTN: FCPR

FIELD COMMAND DEFENSE NUCLEAR AGENCY  
ATTN: FCNM  
2 CYS ATTN: FCTT W SUMMA

INTELLIGENCE CENTER, PACIFIC  
ATTN: COMIPAC

JOINT DATA SYSTEM SUPPORT CTR  
ATTN: C-300

NATIONAL DEFENSE UNIVERSITY  
ATTN: NWCO

NATIONAL SECURITY AGENCY  
ATTN: S21 W LEWIS

NET ASSESSMENT  
ATTN: DOCUMENT CONTROL

PRINCIPAL DEP UNDER SECRETARY  
ATTN: D GOURE  
ATTN: D VESSES  
ATTN: L LIBBY  
ATTN: L SEQUIST

PROGRAM ANALYSIS & EVALUATION  
ATTN: STRATEGIC PROGRAMS & TNF

STRATEGIC DEFENSE INITIATIVE ORGANIZATION  
ATTN: ELOISE BROOKS  
ATTN: HENRY COOPER

THE JOINT STAFF  
ATTN: JKAC  
ATTN: JKC (ATTN: DNA REP)  
ATTN: JKCS  
ATTN: JLWD

THE JOINT STAFF  
ATTN: ED30  
ATTN: HB10  
ATTN: JFAAD

U S CENTRAL COMMAND  
ATTN: CCJ3-X

U S EUROPEAN COMMAND/ECJ2-T  
ATTN: ECJ2-T TGTS DIV

U S EUROPEAN COMMAND/ECJ3-CCD  
ATTN: ECJ-3

U S EUROPEAN COMMAND/ECJ5-N  
ATTN: ECJ5-N NUC BRANCH

UNDER SEC OF DEFENSE FOR POLICY  
ATTN: D R GRAHAM  
ATTN: DUSP/P J D CROUCH II  
ATTN: LTC JOS COLLINS  
ATTN: S CAMBONE  
ATTN: USD/P P WOLFOWITZ

### DEPARTMENT OF THE ARMY

DEP CH OF STAFF FOR OPS & PLANS  
ATTN: DAMO-FDQ  
ATTN: DAMO-SS  
ATTN: DAMO-SWN

HARRY DIAMOND LABORATORIES  
ATTN: SLCIS-IM-TL

U S ARMY FORCES COMMAND  
ATTN: FCJ3-OCE

U S ARMY FOREIGN SCIENCE & TECH CTR  
ATTN: AIFRTA

U S ARMY NUCLEAR & CHEMICAL AGENCY  
ATTN: MONA-NU

U S ARMY WAR COLLEGE  
ATTN: LIBRARY

US ARMY SPACE INSTITUTE  
ATTN: ATZL-SI-CD BOB KREIGER

### DEPARTMENT OF THE NAVY

DEPARTMENT OF THE NAVY  
ATTN: JCM-OOY SYS ANALYSIS OFC

**DNA-TR-91-129 (OL CONTINUED)**

**MARINE CORPS**

ATTN: DCS (PL) STRATEGIC PLANS DIV

**NAVAL POSTGRADUATE SCHOOL**

ATTN: NATL SECURITY AFFRS (NS)  
ATTN: CODE 1424 LIBRARY

**NAVAL SURFACE WARFARE CENTER**

ATTN: CODE H21

**NAVAL SURFACE WARFARE CENTER**

ATTN: TECHNICAL LIBRARY

**NUCLEAR WEAPONS TNG GROUP, ATLANTIC**

ATTN: CODE 221  
ATTN: DOCUMENT CONTROL

**OFFICE OF CHIEF OF NAVAL OPERATIONS**

ATTN: CNO EXECUTIVE PANEL (OP-00K)  
ATTN: NOP 098  
ATTN: NOP 21  
ATTN: NOP 603  
ATTN: OP 654

**PLANS DIVISION**

ATTN: JOINT STRATEGIC BRANCH

**U S NAVAL FORCES, EUROPE**

ATTN: N54 NUCLEAR WARFARE OFFICER

**DEPARTMENT OF THE AIR FORCE**

**AFIA/INKS**

ATTN: INKS

**AFIS/INT**

ATTN: INT

**AIR FORCE CTR FOR STUDIES & ANALYSIS**

ATTN: AFCSA/SAMI R GRIFFIN

**AIR UNIVERSITY LIBRARY**

ATTN: AUL-LSE

**ASSISTANT CHIEF OF STAFF**

ATTN: AFSIMC

**DEPUTY CHIEF OF STAFF/XOX**

ATTN: AFXOOS  
ATTN: AFXOFS

**PHILLIPS LABORATORY**

ATTN: NTCA

**SPACE DIVISION/CWH**

ATTN: CWH DSCS 111

**SPACE DIVISION/YA**

ATTN: YAR

**TACTICAL AIR COMMAND**

ATTN: TAC/DOA

**U S AIR FORCES IN EUROPE/IN**

ATTN: USAFE/IN

**DEPARTMENT OF ENERGY**

**LOS ALAMOS NATIONAL LABORATORY**

ATTN: REPORT LIBRARY  
ATTN: TECH LIBRARY

**SANDIA NATIONAL LABORATORIES**

ATTN: SYS STUDIES DIV 1600  
ATTN: TECH LIB 3141

**OTHER GOVERNMENT**

**CENTRAL INTELLIGENCE AGENCY**

ATTN: N10 STRATEGIC SYS  
ATTN: OSWR/NED

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

ATTN: OFC OF CIVIL DEFENSE J F JACOBS

**U S ARMS CONTROL & DISARMAMENT AGCY**

ATTN: L FISCHER  
ATTN: S KOCH

**U S DEPARTMENT OF STATE**

ATTN: PM/TMP

**DEPARTMENT OF DEFENSE CONTRACTORS**

**ANALYTIC SERVICES, INC (ANSER)**

ATTN: D M TOMPKINS

**BDM INTERNATIONAL INC**

ATTN: E DORCHAK  
ATTN: J BRADDOCK

**GENERAL RESEARCH CORP**

ATTN: F THOMAS

**GTE GOVERNMENT SYSTEMS CORP**

ATTN: S NOVAK

**HORIZONS TECHNOLOGY, INC**

ATTN: B LEE

**INSTITUTE FOR DEFENSE ANALYSES**

ATTN: CLASSIFIED LIBRARY  
ATTN: J GROTE  
ATTN: R SCHWARTZ OED

**KAMAN SCIENCES CORP**

ATTN: DASIA  
ATTN: E CONRAD

**KAMAN SCIENCES CORPORATION**

ATTN: DASIA

**LEON SLOSS ASSOCIATES, INC**

ATTN: L SLOSS

**LOGICON R & D ASSOCIATES**

ATTN: S WOODFORD

**LOGICON/RDA**

ATTN: RDA-E

**MARTIN MARIETTA CORP**

ATTN: S ZEIBERG



NATIONAL SECURITY RESEARCH INC  
2 CYS ATTN: K BAILEY  
22 CYS ATTN: K PAYNE

ORION RESEARCH INC  
ATTN: J E SCHOLZ

PACIFIC-SIERRA RESEARCH CORP  
ATTN: H BRODE

PACIFIC-SIERRA RESEARCH CORP  
ATTN: D GORMLEY

RAND CORP  
ATTN: B BENNETT

S-CUBED  
ATTN: K D PYATT JR

SCIENCE APPLICATIONS INTL CORP  
ATTN: D KAUL  
ATTN: L HUNT  
ATTN: R J BEYSTER

SCIENCE APPLICATIONS INTL CORP  
ATTN: J GOLDSTEIN  
ATTN: J MCGAHAN  
ATTN: J RESNICK  
ATTN: R SIEVERS  
ATTN: W LAYSON

SCIENCE APPLICATIONS INTL CORP  
ATTN: R CRAVER  
ATTN: W MURRAY

SCIENCE APPLICATIONS INTL CORP  
ATTN: JOHN A SHANNON

SOUTHWEST MISSOURI UNIVERSITY  
ATTN: W VANCEAVR

TRW INC  
ATTN: J R BURNETT  
ATTN: T.I.C.

TRW INC  
ATTN: H F BURNWORTH  
ATTN: J PHILLIPS  
ATTN: WSE SUPPORT