A National Security Primer

An Honors Thesis (ID 499)
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Ball State University
Muncie, Indiana
May, 1978
Introduction

National security is not a common everyday subject which is discussed over morning coffee. To many, national security belongs in the realm of generals, statesmen, and lunatics - not necessarily in that order, either. This is unfortunate, for national security and the formulation of such policy touches every American's life everyday, whether it is realized or not.

First of all, we must define national security. This is not as easy as it appears for the entry "national security" does not appear even in the voluminous Webster's Third International Dictionary nor is it found in any other major dictionary. We are therefore left to our own devices in defining this term. For the purpose of this paper, national security will mean the protection of American lifestyles, possessions, agreements, economic viability - in other words, everything considered to be a part of American life. This is a very broad definition and is meant to be for national security involves a very substantial part of each of our lives.

To the ordinary citizen, national security is a very vague concept which manifests itself in very personal and tangible ways, such as taxes, the National Guard, and the draft. He does not see the secondary "layer" of its participation in American society. This layer includes a booming armed forces surplus business and literally millions of jobs in factories producing national security equipment. Tied into all of the above is the
United States' tremendous amount of arms trading (both governmental and private); the traditional view of the United States as protector and policeman; and even our educational system where political ideals and military accomplishments are given a great deal of emphasis. Therefore, whether we realize it or not, national security and its accompanying aspects permeates American society to the point of being incapable of separation from our society without causing disastrous consequences.

This intertwining of national security with American life is part if the answer as to why have this type of policy at all. Other more obvious answers are to protect the "American way of life", and the need for our armed forces to fulfill our commitments to other nations. United States' support is very important to NATO and to Southeast Asian stability. Finally, national security is dearly involved in the American economic system. The ending of this source of employment would put a tremendous strain on private businesses and other governmental agencies to absorb the displaced workers.

Having discussed the "what" and "why" of national security, a word of caution must be extended before consideration of the "how". National security is best when your potential enemies are somewhat in the dark as to your potential. You do not want them to be grossly ignorant of your capabilities for such ignorance could create panic on their part and escalation of the situation might occur. At the same time, exact figures give the enemy exact information when working on its own planning, thus making its
job much easier and again promotes instability by letting it know precisely where you are vulnerable and therefore inviting exploitation of these weaknesses. Therefore, a nation needs to keep the enemy guessing, but not too much so as to create instability. Because of this, the statistics used in the following discussion may or may not be accurate, including the United States'. Likewise, Soviet and other nations' figures are subject to scrutiny. Nevertheless, the figures given should be "ballpark" numbers which can be used with guarded confidence.

The "how" of national security policy formulation is incorporated into several different governmental bodies. These include: (1) the office of the President, (2) Congress, (3) the Department of Defense, and (4) the National Security Council. Within the Department of Defense, are the different branches of the armed forces; namely the Army, Navy, Air Force, and - during wartime - Coast Guard. These organizations and people are responsible for the development and implementation of U.S. national security. During the formulation process of a policy, these bodies take several vital factors into consideration.

Public opinion

It is sometimes felt that public opinion can do little to change decisions already made or affect the decision-making process. This is dependent upon a number of factors. One is the recency of the decision-makers. In the democratic atmosphere of the United States, this factor should be an established fact, however this
has sometimes not been the case. Occasionally, confidential information in the hands of the decision-makers will make it necessary to ignore public opinion simply because they know more about the true situation. Herein lies another problem; this attitude may transfer over into other areas and other situations where the public is as equally informed as the decision-makers. Public opinion in then ignored to the point of contradiction because the officials think they know more about the situation by virtue of their positions. There is not so fine a line between intelligent use of discretion in isolated incidents and constant snobbery of the public's opinion because of the public's supposed ignorance. Vietnam and various phases of that conflict (the bombing of North Vietnam, the invasion of Cambodia, etc.) are obvious examples of such behavior. Vietnam is also a good example of public opinion causing change in national security policy.

The public as a whole is generally rather gullible and/or apathetic as far as national security is concerned. However, once the public has been aroused over certain issues, changes can occur. Internal pressure exerted on Congressmen and domestic instability can redirect government attention back to the public and their wants. For example, the civil unrest, peace moratoriums, and general dissatisfaction with the Vietnam War caused a change in that policy. Peace initiatives, "Vietnamization", and the eventual end to the draft were products of such agitation.

Vietnam is not the only example of public opinion causing change in the field of national security. Oftentimes, public
opinion is expressed through Congress - one of the afore mentioned components of policy formulation. Such cases include the furor over ABM construction which caused abandonment of the program. Another was President Kennedy's actions during the Cuban Missile Crisis. His actions were based partially on the fear that he would be impeached if he had done nothing - a possible rationalization by Kennedy, but nevertheless a real concern for him.¹

Grassroots reaction can also cause change and is linked to the next factor affecting national security policy formulation - conviction and truthfulness.

**Conviction and truthfulness**

Lincoln is supposed to have said, "You can fool some of the people some of the time and you can fool all of the people some of the time, but you can't fool all of the people all of the time." This saying is as applicable today as it was over 100 years ago. To have a successful national security policy, one cannot lie to the public and consistently expect to get away with it. Public opinion is based, in part, on the people's perception of an issue or individual. If one is considered to be honest and fair, chances are good that public opinion will be favorable. If one is fervent in one's beliefs, it will be swayed simply by the force of conviction.

Likewise, in national security policy-making, conviction and truthfulness are needed for: (1) bolstering support at home and (2) earning the confidence of other nations. The American
public is not dumb. It may appear arathetic or lethargic, but underestimation on the basis of these factors can be a fatal mistake. A decision-maker, if assuming that the American people are shallow-minded, would be tempted to believe that what he tells the public doesn't matter anyway. Such an attitude, if discovered, would deal a death-blow to that decision-maker's credibility with the American people. Likewise, if he misreads the public's commitment to an ideal or course of action, public dissatisfaction and a loss of credibility once again results. If one lies or shows a lack of enthusiasm about a particular subject to one's allies, credibility is again lost. For example, if the United States showed a singular lack of interest in NATO, NATO members would wonder about American commitment to Western European defense, up to and including nuclear weapons.

Finally, if a person cannot trust his own government or ally to be straight with him, then the proverbial question "Who can you trust?" is a valid concern. The loss of credibility causes distrust of government and/or of an ally. Stability is threatened in the international community when communications break down and suspicion becomes the norm rather than the exception. Suddenly, he cannot trust anyone and must guard against every possible source of conflict. This factor is a very basic and necessary component of policy formulation.
Accurate intelligence

Accurate intelligence is vital in formulating national security policy. Remembering the qualification given earlier concerning statistical information, one can appreciate the difficulty of obtaining reliable information about one's potential enemies. As far as surveillance of nuclear sites, modern technology has provided photographic satellites which can take incredibly clear pictures from their orbit in space. Then too, the relatively long time required for the construction of strategic systems is another help in their discovery before they become operational. The real problem with strategic systems is that only human observation can completely identify actual numbers of missiles and warheads, production rates, quality, and precision. This problem directly influences the next step.

Proper interpretation

Once information is received, the next step is to interpret it. Correct interpretation is as crucial as the actual collection of intelligence. Misinterpretation can create immediate instability as well as long-term problems. Suppose that the European members of NATO interpret Carter's decision not to produce the neutron bomb as a weakening of American resolve to defend Western Europe. This would be a short-term effect of their interpretation. Imagine that within the next ten years the Soviet Union invades Western Europe with the predicted armored attack. Western Europe would forever lament United States' stupidity and timorousness in deploying the neutron bomb. This long-range effect
could quite obviously influence Western European interpretation of American decisions after the conflict.

Another aspect of proper interpretation is distinguishing between political motives and strategic motives. The Soviet attempt to place ballistic missiles in Cuba was as much a political ploy as a move made for strategic purposes. This was realized by Kennedy, but acquiescence was viewed as showing political weakness and lack of resolve on the part of the United States. As John Kennedy said, "If they get this mean on this one in our part of the world, what will they do on the next?" Thus, interpretation of intelligence and motives can often spell the difference between the "correct" response and possible disaster.

**Natural resources**

Increasingly, natural resources have played (and will continue to play) important roles in any discussion about national security - oil being the predominant concern. American dependence upon the Middle East for oil is well-known, but lesser known is American reliance on imports for many other elements for strategic elements. On the following page is a table comparing U.S.S.R./U.S. imports of strategic material:
In addition, the U.S.S.R. is almost self-sufficient in oil, and, according to General George S. Brown, former Chairman of the Joint Chiefs of Staff, "...can produce within the U.S.S.R. all the military material it requires." In the same discussion, Brown doubts American capability to achieve the same level.

This last statement touches upon another natural resource - industrial capacity. While historically the United States has far out-classed the rest of the world in this field, recent years have seen this dominance threatened. This can be no more graphically shown than by Brown's concern about American industrial ability "...to respond rapidly to the military requirements which would evolve from a major conflict."
Finally, the ultimate natural resource of a nation is its people. An adequate population is necessary to run the factories, ship the arms, protect and distribute the arms, and fight the enemy. Without this resource and their having the resolve to fight, all the other resources are wasted.

History

Though the history of national security does not directly and inevitably affect policy formulation, it does, nevertheless, influence decision-makers. Since W.W. II, U.S. policy has evolved through many different steps.

Immediately following W.W. II, the United States' monopoly of the atom bomb enabled the U.S. to dictate policy. The Truman Doctrine of financial support to foreign nations involved in the "fight" against Russia and/or communism was one of the first policies of the post-war era. This was followed by Eisenhower's Massive Retaliation, a concert which called for massive nuclear retaliation upon any major provocation by the U.S.S.R. This rather dubious policy was replaced by Kennedy's Flexible Response, the idea being that Massive Retaliation was infeasible and irresponsible. It was felt that the U.S. should have a variety of responses to choose from, matching the response with the situation. In so doing, the United States lessened the possibility of nuclear holocaust, but increased U.S. defense spending. Between 1960-62, this increase amounted to $8.8 billion. 9
Reaction to Vietnam and the desire for the end of active military participation in that conflict resulted in "Vietnamization." Vietnamization was the providing of aid and war material to Vietnam in compensation for U.S. troop withdrawal. This policy was expanded into the Nixon Doctrine which provided for American aid to a requesting country. The U.S. would provide equipment and training which the disadvantaged country could not produce on its own. In addition, Strategic Arms Limitation Talks (SALT) were started to try and curb the international arms race.

Today, SALT continues and it appears that Carter has "put the brakes on" further deployment of strategic weapons systems, if his B-1 and neutron bomb decisions can be interpreted in this way. Basically, we are now in an era of "wait and see" with decisions made today having profound influence on the future of U.S. national security - whether that be U.S. inferiority, escalation of the arms race, or disarmament.

International climate

The concept of international climate is a more difficult to describe than some of the other factors of national security already discussed. International climate can best be defined as world public opinion. World public opinion can influence a nation's security policy in different ways. For example, international disapproval of apartheid has led to a restructuring of Rhodesian and South African security policy. Because of world pressure, these governments have found it expedient to negotiate with the
several black nationalist organizations whom the white minority administrations find particularly offensive. Not long ago, these same governments were earnestly attempting to run these organizations out of existence and, if it were not for international pressure, would still be trying to eradicate them. Likewise, Israel may yet find it necessary to abandon its stance on a Palestinian homeland and the West Bank. This would be especially true if Western pressures were exerted on Israel and took the form of arms embargoes among the several Western powers.

In smaller countries especially, international pressure can have a marked effect on policy. Economic sanctions are particularly feared, for most of these developing and even industrialized small countries depend upon imports of goods for their economic survival. If international climate should suddenly turn against them, an adamant stand by the country might result in economic disaster.

International climate is as predictable as the wind - i.e. it isn't. This in itself is a big enough problem, but to compound the situation, world opinion will not react the same way to any two similar situations. Inter-nation relations, ethnic ties, economic dependency, technical assistance, past history, personalities of world leaders - all of these and more will effect a particular nation's reaction to a specific situation. Multiply this by the more than 150 different countries in today's world, and one comes up with an incredibly complex picture. To simplify
this problem, most nations will monitor certain countries they consider to be key reflectors of world opinion. These are usually the larger, more industrialized nations who hold a great deal of power and suasion over other smaller or less industrialized nations. The United States, Russia, and China are obvious examples of these large influential indicator countries.

Among these larger nations, concern with international opinion is reduced to one's allies, suppliers of natural resources, markets for goods, and areas of particular strategic significance. They are usually not concerned with any of the other large powers' opinion for invariably it will be negative. Likewise, the "aligned" nations with that particular nation will follow her lead. What one is mainly concerned about, then, is one's friends and suppliers - the nations whose opinions "really" count. For instance, you would not expect the Soviet Union to be ecstatic over U.S. production of the neutron bomb, but what the U.S. would really be concerned about would be West European reaction to such a decision.

Finally, while international climate is a veritable labyrinth of intricacies and idiosyncracies, nations have found a way to crudely measure it - as mentioned above. With this calculation of world opinion, one must add timing. Poor timing of a policy decision can ruin the effect of the policy, no matter how good it might be. Closely tied to this is credibility. It is far easier to dislike an idea promulgated by a less than reliable source than it is to find fault in a usually astute and well-informed one.
Economics

Perhaps the most overriding consideration of the majority of national security questions is cost. The optimum for any operation is getting the most for the least, and national security is no different. The discussion of the high cost of defense has been rampant in the United States since the day of independence. From the days of virtually no budget for national security, the United States has progressed to the stage of a multi-billion defense budget which is expected to increase with each coming year. Today, a quarter of every tax dollar is spent on national security.10

As an example of this increase as well as volume of spending, the following table shows U.S. military expenditures for fiscal years 1975 and 1976:11

<table>
<thead>
<tr>
<th>Item</th>
<th>Fiscal 1975</th>
<th>Fiscal 1976</th>
</tr>
</thead>
<tbody>
<tr>
<td>Military personnel</td>
<td>$24,967,611,000</td>
<td>$25,063,518,000</td>
</tr>
<tr>
<td>Retired military personnel</td>
<td>6,241,772,000</td>
<td>7,295,679,000</td>
</tr>
<tr>
<td>Operation and maintenance</td>
<td>26,329,633,000</td>
<td>27,901,590,000</td>
</tr>
<tr>
<td>Procurement</td>
<td>16,041,841,000</td>
<td>15,963,849,000</td>
</tr>
<tr>
<td>Research and development</td>
<td>8,966,499,000</td>
<td>8,923,023,000</td>
</tr>
<tr>
<td>Military construction</td>
<td>1,461,767,000</td>
<td>2,018,627,000</td>
</tr>
<tr>
<td>Family housing</td>
<td>1,124,297,000</td>
<td>1,191,772,000</td>
</tr>
<tr>
<td>Civil defense</td>
<td>86,404,000</td>
<td>79,835,000</td>
</tr>
<tr>
<td>Corps of engineers and other civil</td>
<td>2,050,662,000</td>
<td>2,124,252,000</td>
</tr>
<tr>
<td>Total - Defense Dept.</td>
<td>$87,017,373,000</td>
<td>$90,160,407,000</td>
</tr>
</tbody>
</table>

The American public is keenly aware of the cost of national security - one of the few aspects of the subject it concerns itself. No formula has been devised by which "X" amount of security can be bought by "Y" number of dollars and budget requests are basically educated guesses at a solution to this equation. It is this
aspect of the cost of security which brings on the largest amount of discussion. There is no guarantee that a lesser or greater sum of money can do the job better or worse. Also, national security is an ongoing process which never is completed. It is constantly changing and therefore needs funding to meet these changes. These improvements and advancements are not entirely controlled by one. New developments by potential enemies call for countermeasures which may not even exist at the time. Thus, money is needed to develop and deploy this countermeasure so as to neutralize the opposition's advantage.

The argument that the cost of liberty knows no price may sound nice, but it is naïve. Only during wartime can one actually see the results of the nation's investment in national security. In such a case, a nation can actually see whether its military hardware is better than the opposition and whether more research is required or more items of a particular type are necessary. In peacetime, this is not possible and the average taxpayer, who likes to see a return on his tax dollar, is frustrated. The mere possibility of security is not enough, and he will often call for a promise of security or threaten to cut security spending. He can see the results of federal housing projects, federal courts and prisons, federal transportation funding, federal grants-in-aid in education - but he cannot tangibly see national security. He can see the components of this concert (army, navy, air force, etc.), but he cannot grasp the ultimate reason for them. To pay for something you cannot see is a little like buying Florida swamp land - it reverts back to whether you trust the seller. This has been
and will continue to be the fundamental problem of the economics of national security: the selling of the concept of national security at the price considered to be capable of getting the most for the least.

New ideas

As mentioned earlier, national security is an ongoing problem, one which cannot be ignored for too long a time without having serious implications for the future. A graphic example of this was France's false assumption before W.W. II that the Maginot Line was the ultimate in warfare and capable of defending against anything. Hitler and his "blitzkrieg" quickly disrelled this myth.

It would be ridiculous to believe that warfare and the concepts of national security of today are the optimum to be reached. If such thinking had persisted throughout history, we would still be chucking spears and rocks at each other in defense of our territory. Just as the very concept of "territory" has changed, so has the concept of security - and it will continue to change as the situation warrants.

National security must keep up with the changing national needs or it becomes a useless encumberance to the nation. The very concept of national security changes, as was alluded to in the earlier section dealing with history. This formulation of new ideas must incorporate all of the above factors as well as any future factors which may become significant in policy-making. Only constant
and serious evaluation of national security requirements can keep it a viable force in the protection of a nation.

The above discussion has been general in nature (though basically concerned with the United States) for a reason; although every nation has its own particular manner of evaluating and developing a security policy, all of the above are prime factors in any consideration of the topic. The above are especially valid in democratic societies, yet they affect all types of governments to some degree.

This discussion will now turn more specifically to the United States' present position and also possible alternatives for the future. The above factors should be kept in mind, however, in the following and should be applied to all nations mentioned, for their security policies are predicated on the above factors as much as the United States'.

Before turning to actual facts and figures of U.S. security policy, a basic concept of this subject must be dealt with. This is the argument of defense vs. deterrence. Mr. Glenn H. Snyder has defined these two terms very well:

"Deterrence means discouraging the enemy from taking military action by rosing for him a prospect of cost and risk which outweighs his prospective gain. Defense means reducing our own prospective costs and risks in the event that deterrence fails."
He then goes on to explained the difference between these two concepts:  

"Perhaps the crucial difference between deterrence and defense is that deterrence is primarily a peacetime objective while defense is a wartime variable."

This second quote strikes at the core of the argument for and against these two concepts. To defense proponents, deterrence is fine and good, but once it fails, are these forces capable of defense? Deterrence backers claim that deterrence won't fail and that additional forces (for defense) are unnecessary and have a destabilizing effect on the world scene. The two concepts are not necessarily complimentary - what is good for deterrence is not always good for defense and vice versa. For instance, U.S. troops in Europe are adequate to serve as a "trip-wire" for the threat of nuclear attack upon provocation, but are by no means adequate for defense. Conversely, if U.S. troops in Europe were kept at defense levels, instability would likely occur because of Soviet perception of a potential threat to her security.

Today, the United States' national security policy is based on deterrence. This is understandable, if Mr. Snyder's definition is correct. Hopefully, at the same time, this level is near enough to a "defense" posture so as to be prepared in case of attack. This is the fine line a policy-maker must search for to be able to reach the optimum level of security.
The tools of U.S. security

As has been the pattern since 1945, the Soviet Union is still perceived as being the greatest potential threat to American security. For this reason a substantial amount of the following discussion will be concerned with this potential threat. Also, the discussion will deal with two broad categories - nuclear and conventional forces - and, more specifically, their capabilities on land, sea, and in the air.

The first force alternative to be discussed is nuclear capabilities of the United States. Historically, the Triad of manned bombers, intercontinental ballistic missiles (ICB's), and submarine-launched ballistic missiles (SLBM's) have comprised U.S. nuclear forces.

The ICB is the land-based nuclear weapon of the United States. Appendix A gives a closer look at present U.S. and U.S.S.R. nuclear force components and their capabilities. American strategy has developed considerably since the years of Massive (nuclear) Retaliation of the 1950's. At first glance, U.S.S.R. capabilities appear to be substantially greater than the United States'. This is deceiving, for U.S. technology is still several years ahead of Soviet efforts. Whereas American concern has been directed at accuracy and multiple re-entry vehicle (MIRV) types of warheads, Soviet concentration has been on large numbers of very large warheads. An example of the U.S. advantage in MIRV type missiles are MIRV and multiple independently targetable
re-entry vehicles (MIRVs). In variations, several warheads are carried within one missile. MIRVs operate much like the reliets of a shotgun, being fired simultaneously in a cluster. MIRVs are similar except that each warhead can be individually aimed at separate targets and are fired individually. Only recently has the Soviet Union been able to achieve this capability.

The change in U.S. development to missiles carrying several small warheads is due, in part, to American improvements in accuracy. A mathematical formula based on accuracy and warhead size has been developed to express kill potential. In this formula, circular error probable (CEP) refers to the distance from a target a warhead is likely to land. Yield deals with warhead size:

\[ K = \frac{\text{yield}}{\text{CEP}^2} \]

A table has been developed by Edward Luttwak which shows the kill probability of various sized warheads with different CEPs on ICBL silos "hardened" (reinforced) to withstand pressures of up to 300 pounds per square inch:

<table>
<thead>
<tr>
<th>Warhead Yields</th>
<th>10,000 kiloton</th>
<th>200 kiloton</th>
<th>1 megaton</th>
<th>5 megaton</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEP (in feet)</td>
<td>100%</td>
<td>1%</td>
<td>3%</td>
<td>9%</td>
</tr>
<tr>
<td>2,500</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>1,500</td>
<td>4</td>
<td>16</td>
<td>40</td>
<td>90</td>
</tr>
<tr>
<td>1,000</td>
<td>17</td>
<td>40</td>
<td>75</td>
<td>99</td>
</tr>
<tr>
<td>500</td>
<td>35</td>
<td>65</td>
<td>96</td>
<td>99</td>
</tr>
<tr>
<td>200</td>
<td>82</td>
<td>98</td>
<td>99</td>
<td>99</td>
</tr>
</tbody>
</table>
To help visualize the preceding chart, Appendix B shows a map of Muncie with the ICBM silo being represented by Bracken Library.

Thus it can be shown that a small warhead with precision accuracy is just as capable of destruction as an inaccurate large warhead. One might well ask what difference this makes. The implications of increased accuracy and smaller warheads are several. Smaller warheads allow more room for the very navigational equipment which makes them so potentially effective. Also, the smaller warhead with improved accuracy enables MIRV and MIRV to be effective weapon systems. Advancement of these elements has enhanced the discussion and research of maneuvering re-entry vehicles (MARVs).\(^{19}\) In MARVs, capabilities are the same as MIRV with the addition of maneuvering ability so as to make interception much more difficult. Finally, the cost for and upkeep of smaller warheads is considerably less than the larger ones.

At the present, it is thought that Soviet technology and quantity of missiles have progressed to the point where a first strike by the U.S.S.R. could result in the destroying of as much as 95% of the United States’ land-based ICBM force.\(^{20}\) Conversely, an American first strike is estimated to be capable of destroying up to 80% of the Soviet land-based ICBMs.\(^{21}\) Thus, both the United States and the Soviet Union land-based ICBM silo vulnerability calls for new alternatives for the survival of this nuclear weapons system. Nine such possibilities have been advanced and include: (1) do nothing (2) abandon them (3) multiply them (4) warn them (5) fake them (6) hide them (7) superharden them
(9) make them mobile (9) defend them. A decision must be made by the United States on this critical matter before her ICBM land-based force is neutralized by sheer weight of Soviet megatonnage.

Perhaps the most ironic aspect of the entire nuclear ballistic missile force is that there is no guarantee that the systems will work. Granted, there have been tests but the actual ability of any particular system to deliver its expected potential will be known only when actually used in an attack. For example, in final tests on the Poseidon SLEM ten months before deployment, 70% of the firings were described as successful. Even if they do perform, no one knows how the combat environment will affect these systems.

As mentioned earlier, U.S. land-based ICBMs are becoming increasingly vulnerable. One alternative mentioned earlier is the possibility of abandoning them and reducing the Triad to a Diad. One of the remaining elements would be the SLEM.

Submarine-launched ballistic missiles have been increasingly viewed as a viable replacement for land-based ICBMs. American and Soviet comparisons of SLEMs are found in Appendix C. Advantages cited for the SLEM include maneuverability of base (the submarine), relative invulnerability of the submarine, and the survivability of the submarine in the case of attack or counterattack. Many of the considerations discussed in relation to the ICBM (MKV, MIRV, MBRV, accuracy, advantages of smaller
warheads, etc.) are applicable to the SLBM because of its similar role in national security policy. The advantages of the SLBM, however, are not expected to last indefinitely because of this very discussion of submarine viability. Anti-submarine surveillance, detection, and warfare are receiving a great deal of attention in both the United States and the Soviet Union. These developments will probably lead to the next stage in the history of warfare - ship to ship combat under the sea. Be that as it may, the present environment gives the submarine and the SLBM the possibility of having a very crucial role in the future.

The final aspect of the Triad to be discussed is manned bombers. This mode of nuclear delivery (developed and dating from 1945) is still staunchly defended. Arguments for the manned bomber have centered on its ability to be recalled, should it prove necessary; its flexibility in targeting; its proven ability in combat; its versatility, being able to carry both conventional and nuclear warheads; its range, with tanker assistance; and flexibility of dispersal in an emergency. Countering these arguments are the bomber's long reaction time, vulnerability to interception, cost of sizable force and upkeep, and human error or possible disobedience.

The development of new air defense and warning systems have seriously jeopardized the manned bomber's credentials. It appears that the manned bomber is still viable in the conventional realm, but its strategic capabilities must be altered. One such alternative is the air launched cruise missile (ALCM).
The ALCM gives the manned bomber more flexibility and gives it more possible roles for the future. As a so-called "stand-off" weapon, a bomber could deliver an ALCM outside an enemy's air space and beyond its interceptors' range. In this way, the bomber would avoid air defenses, interceptors, and reduce identification capabilities of the enemy's warning system - an ALCM being much smaller than a bomber. The future of the cruise missile will be discussed shortly.

Whatever the future of the manned bomber, a firm decision must be made soon. The present workhorse of the U.S. bomber fleet - the B-52 - is in its eighth variation (the B-52H) and the operational life of the fleet is not expected to go beyond the mid 1980's. The recent decision on the B-1 bomber has postponed but not decided the issue of whether the manned bomber will continue to be an element of U.S. nuclear forces.

Research and development in the field of nuclear weapons continues. Already mentioned is NARV and the B-1 bomber. Another system under discussion and research is the M-X land-based ICBM, a system designed to replace the present day Minuteman force. Another weapon which has caused considerable discussion is the cruise missile, a small versatile missile capable of land, sea, and air deployment.

The cruise missile is quite small when compared to other nuclear weapons; its length of 6.25 m and width of 53 cm is considerably smaller than the Minuteman III - 18.2 m and 1.85 m,
respectively. Its role as an ALCM has already been mentioned and there is also a sea-launched cruise missile (SLCM) under development. In the SLCM configuration, a tactical (conventional) warhead has also been developed for anti-surface ship and shore bombardment missions. The cruise missile's ability to fly a few meters from the ground makes it a very difficult weapon to defend against. Its size increases this problem as well as making storage relatively easy. It is less costly than ICEs and all of the positive arguments for ICEs, SLEMS, and manned bombers can be applied to the cruise missile. Add all of the above together and one finds the cruise missile and future variations thereof to be a very promising prospect for the future.

Triad elements have become the main factors discussed at Strategic Arms Limitation Talks (SALT), and are possibly the most talked about of our armed forces today. While the predictions that traditional forms of warfare would disappear with the deployment of nuclear weapons have not come true, nevertheless, they have had a profound affect on national security to the point of dominating discussion on the subject for the last twenty-five years. Vietnam plus a re-evaluation of the United States' strategy, however, have renewed the interest in American conventional warfare capabilities, the next topic of discussion.

Today's U.S. conventional forces are listed in Appendices D29 and E30. Since the concept of Flexible Response was developed, American conventional forces have been increasingly
devoted to variety so that any number of responses might be used in any given situation. Vietnam, if nothing else, was a good testing ground for many new concepts and ideas as well as new weapons. The helicopter, for instance, has progressed from a troop carrier to a full-fledged gunship. The possibilities for vertical take-off and landing (VTOL) and short take-off and landing (STOL) aircraft were displayed in the conflict, also. Finally, tactics for operations against unconventional forces were also hammered out and the difficulties of fighting such a force were realized.

Perhaps the biggest problem with today's U.S. armed forces is manpower. Despite the findings of the President's Commission on an All-Volunteer Armed Force, which claimed that "...the nation's interests will be better served by an all-volunteer force"\(^{31}\), facts since 1970 have proven otherwise. Below is a table of armed forces strength levels, by service branches, from 1970-76:\(^{32}\)

<table>
<thead>
<tr>
<th>Year</th>
<th>Army</th>
<th>Air Force</th>
<th>Navy</th>
<th>Marine Corps</th>
<th>Coast Guard</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>1,322,548</td>
<td>791,349</td>
<td>692,660</td>
<td>259,737</td>
<td>38,172</td>
</tr>
<tr>
<td>1971</td>
<td>1,123,810</td>
<td>755,300</td>
<td>623,248</td>
<td>212,369</td>
<td>38,029</td>
</tr>
<tr>
<td>1972</td>
<td>810,060</td>
<td>725,832</td>
<td>588,043</td>
<td>108,238</td>
<td>37,266</td>
</tr>
<tr>
<td>1973</td>
<td>800,912</td>
<td>698,414</td>
<td>566,953</td>
<td>103,602</td>
<td>36,628</td>
</tr>
<tr>
<td>1974</td>
<td>779,642</td>
<td>646,624</td>
<td>542,737</td>
<td>107,200</td>
<td>36,407</td>
</tr>
<tr>
<td>1975</td>
<td>778,792</td>
<td>623,209</td>
<td>548,369</td>
<td>104,720</td>
<td>36,902</td>
</tr>
<tr>
<td>1976</td>
<td>771,301</td>
<td>595,646</td>
<td>527,296</td>
<td>103,400</td>
<td>36,730</td>
</tr>
</tbody>
</table>

The increase in pay to attract the new volunteer has also put a tremendous strain on the defense budget. Mentioned earlier under economics was the Defense Department's budget for fiscal

26
year 1976. Under that budget, personnel salaries made up 27.8% of the total Department budget. If pensions and other payments to retired personnel is included, this figure jumps to 35.9%. It readily becomes apparent that if an increase continues in salaries, the all-volunteer armed force becomes infeasible simply because it cannot be afforded.

Another discrepancy in U.S. conventional forces is the Reserves. According to General George S. Brown, "...some Reserve units would have to be deployed at less than full combat ready status" should an all-out conflict occur. This is not just a temporary problem, either. Brown goes on to say:36

"...by fiscal year 1980, Army reserve manpower, which accounts for 80% of the total U.S. personnel required for major war in Europe, will have a shortfall of 240,000 during the critical stages of the conflict."

As can be seen, current U.S. conventional force levels are seriously lacking in all areas. However, a reinstitution of the draft might well receive an overwhelmingly negative reaction from the American people, especially if it were instituted in peacetime with no apparent danger visible to the public. The neo-isolationism, which some Americans have flirted with since the Vietnam War, presents serious problems for the national security planner. To the neo-isolationist, American presence in NATO, Panama, and Korea is seen as bait to get the United States involved in another mistake. He does not realize the reasoning and the factors affecting the decision for this deployment. For such commitments, American military personnel are necessary and in
enough numbers so as to make their presence meaningful. These commitments are becoming increasingly more difficult to fulfill and a solution must be found to solve the manpower shortage.

The ideal system would be unrestricted mandatory service to the country of, say, two years. This would not have to be military service, but Peace Corps, VISTA, etc. could also be substituted. In the military service, the active membership would be followed by a specific length of time in the active Reserves and eventually assigned to the retired Reserves.

This is idealistic, however, and the hard reality is that Americans look on mandatory military service (or mandatory anything) with distaste and only necessary in the case of "clear and present danger". This is indeed unfortunate, for one of the responsibilities of citizenship is to fulfill certain requirements - such as a person would in a club. American "membership" includes the concept of protecting, improving, and perpetuating the "club" for future generations.

What is needed is a re-education of the American public as to the responsibilities of citizenship in the United States. This is not a call for flag-waving and putting the nation on a war-footing. Instead, it is a challenge to the American people to recall what being American entails. It is also a call for the U.S. to be ready - if needed - to protect itself should such a situation develop.
Something should be said here about the military profession itself. There has been a severe backlash since Vietnam against the military and especially the professional soldier. What should be realized, however, is that the armed forces are administered and controlled by a civilian government. The President, as commander-in-chief of the armed forces, exercises ultimate authority over the military forces. Only the President and Congress have the constitutional power to commit U.S. military forces to battle or occupation. To blame the military for a war is akin to blaming the postman for poor mail delivery; both are but the facilitators of policy - they do not create it.

The argument that the military - if it realizes that American involvement or strategy is wrong - should somehow cause its recall by political suasion or direct disobedience, opens a Pandora-type door. The MacArthur-Truman incident is a classic example of this type of confrontation. The military is apolitical for a reason, one of which is that party politics mixed into the military might conceivably allow the military to dictate its own policy. The military is an instrument of the government and as such relies upon the government to make sound decisions before calling on the armed forces to do their job. At the same time, as the expert in military affairs, the armed forces should express their opinion before the final decision is made. It would be irresponsible to make a decision for military involvement without checking with the "experts" as to the feasibility of such an action. Only through this type of relationship can the military be effective in a democratic society.
The above discussion has dealt with three broad topics, yet U.S. national security involves more than just the "big three". Below are three more topics which, although not fundamental to American security, nevertheless can or do play an integral part in American defense.

**NATO**

The North Atlantic Treaty Organization (NATO) has been placed in a separate section because of renewed interest in the alliance. With the withdrawal of U.S. troops from and eventual collapse of South Vietnam, American commitments and intentions in other areas of the world were questioned. Partly, as a response to this uncertainty and partly because of an increase in Soviet strength along the borders of Western Europe, U.S. support and interest in NATO has been revived.

The official reason for the American presence in Western Europe "...is to contribute to the NATO deterrent capability and to help defend this region, if necessary, against aggression by the Soviet Union and its Warsaw Pact allies." A more accurate and realistic assessment of U.S. involvement is found in the idea "...to deter intercontinental nuclear exchange and keep all other conflict 'over there'."

American presence in Western Europe is reinforced by the deployment of four divisions, three brigades, and two armored cavalry regiments, plus an air complement of approximately 500 combat aircraft. Naval units include the Sixth Fleet and attack submarines.
European contributions to NATO are about 49 divisions, 1900 combat and 300 transport aircraft, and almost 550 naval combat ships (these figures are based on NATO-obligated, first day of mobilization estimates). This force of roughly 53 divisions, 2400 combat aircraft, and 600 naval combat units is feared to be incapable of stopping a determined attack by the Soviet Union. Instead, NATO conventional forces are backed by the threat of U.S. nuclear retaliation in response to a Soviet attack. This threat is seen as being based on political commitment rather than expected damage.

"So long as the American commitment to Western Europe remains clear and there is a large American military presence in Europe to italicize that commitment, the Soviet Union has every reason to believe that an all-out assault on Western Europe would lead the United States to conclude that it was confronted with the stark choice of nuclear war now or nuclear war later...the content of American plans, organizational inertia, and the structure of the strategic problem would all point toward a choice of war now...."

An alternative to this "nuclear war now or nuclear war later" is the so-called "mininukes" (neutron bombs). President Carter's recent decision on the production and deployment of this relatively "clean" atomic warhead has been viewed by many NATO military leaders as a mistake. These tactical nuclear weapons are seen by the majority as having a very definite deterrent value - particularly against a tank attack. At the same time, they are viewed as a complement to - not a replacement of - conventional forces. Then too, their position as a nuclear weapon causes several psychological and political problems.
Some feel that the use of tactical nuclear weapons should be accompanied by a political announcement giving the reason for their use (showing the Soviet Union NATO's resolve to defend itself by any means available) and a warning against escalation.\textsuperscript{43} Others promote British and French development or acquisition of these weapons.\textsuperscript{44} A suggestion has also been made that the difference between conventional arms and "mininukes" is narrow enough to eliminate political restraints upon their use altogether.\textsuperscript{45}

Regardless of the ultimate decision on tactical nuclear weapons, there are several problems NATO must resolve if it is to continue to be an effective counterforce to the Warsaw Pact. According to the Joint-Chiefs-of-Staff, the following are prerequisites for improvement in NATO conventional capabilities:\textsuperscript{46}

1. modernization of air defenses and deployment of airborne early warning system
2. acceleration of maritime improvement programs
3. correction of deficiencies in electronic warfare
4. increased firepower capability
5. more chemical defense equipment and training
6. increase in Allied reinforcement capabilities - both sea and airlift - and more detailed planning and coordination of their use
7. improvement of civil-military planning
8. more stockpiling of pre-positioned equipment and war reserve stocks
9. improvement of host nation support of reinforcing forces
10. emphasis on interoperability of NATO military equipment
11. improvement of command, control, and communications capabilities

12. realization of Western European powers of need for an increase in their defense expenditures for NATO.

These are very difficult requirements to fulfill, but some changes need to be made - and quickly. The build-up of Warsaw Pact forces plus advances made in Soviet missile technology could quite conceivably make a Soviet first strike feasible before the turn of the century. If deterrence is to work - and yet not be caught short if it fails - changes in policy must be instituted soon or the situation might well devolve to a level where the United States would be distinctly inferior to the Soviet Union. General Brown has put it quite bluntly:

"Remedial actions can and must be taken by all the Allies or the risk will increase unacceptably especially as related to the conventional force area. Failure to improve will force NATO to resort quickly to nuclear warfare or suffer the consequences of intimidation or defeat by superior Warsaw Pact forces."

Chemical and Biological Warfare

In 1970, the United Nations released a report concerning chemical and bacteriological (biological) weapons. Their findings are rather interesting:

"Once the door was opened to this kind of warfare, escalation would in all likelihood occur, and no one could say where the process would end. Thus, the report concludes that the existence of chemical and bacteriological (biological) weapons contributes to international tension and that their further development spurs the arms race without contributing to the security of any nation."
Perhaps even more interesting, however, is General Brown's statement concerning U.S. chemical warfare capabilities in 1978:

"The Joint Chiefs of Staff strongly support the improvement of our chemical munitions stockpile as an essential enhancement of our ability to deter and, if necessary, fight in a toxic environment."

One might well be disturbed by this apparent American disregard of the U.N. study. Some of the advantages of having CBW capability needs to be explained first:

1. A capability to wage CBW, particularly BW, might be acquired for a relatively small investment.

2. The outcome of conventional warfare is likely to be determined in the long run more by manpower than by firepower... because CB weapons may permit higher casualty rates than conventional weapons, they might be able to diminish the consequences of manpower inferiority.

3. The greater the probability of conflict with an enemy lacking CB protection, the greater may be the attraction of a CBW capability.

4. The greater the number and range of conflicts in which a country envisages that it may get involved, the more value it may attach to the ability of CB weapons to complement other forms of firepower, and to extend the range of military operations available.

5. CB weapons may bring about higher casualty rates than conventional weapons. They may therefore extend the power of limited weapons-delivery capabilities. Coupled with their adaptability to clandestine and surprise operations, this feature might be valued in guerilla or insurgency warfare.
In light of the above possibilities for wanting CBW capabilities, American development can perhaps be understood a little better.

The most obvious reasons for U.S. defensive development as well as offensive development of CBW capabilities are the third and fifth stated above. Soviet advancement in CW is a documented fact. The first American priority dealing with CW is to meet this threat by making improvements in U.S. CW defensive measures. This situation deals specifically with the third reason given above. Less obvious, however, is the fifth. To be mentioned later is the terrorist threat. CBW would naturally be attractive to the terrorist because of its "shock value" in the world community and its potential for destruction.

Another aspect to the problem of CBW is the possible use of CBW by a small nation on a larger nation, especially if the attacked nation has no CB defenses. This potential might conceivably, in time, become more attractive than conventional warfare. Just how effective CW systems can be is displayed in Appendix F. This type of potential would be extremely attractive in a situation such as the Middle East. BW capabilities can be demonstrated by the following example. If half a kilo of Salmonella (a group of bacteria which produce severe intestinal infections such as food poisoning, gastro-enteritis, and typhoid fever) were added to a reservoir containing five million liters of water, and complete mixing occurred, severe illness or disability would be suffered by anyone drinking one milliliter of untreated water (about three ounces).
Thus, U.S. desire for CBW is a defensive reaction to Soviet development and American vulnerability to these types of weapons. As mentioned earlier, this is the primary objective of American CBW policy. Vaccination is the chief method of protection against BW. Chemical warfare, however, is harder to combat. Antidotes are available, but are good only if administered within one half hour before or after an attack. The biggest, most publicized fear of CB attack, however, is perhaps the easiest to control. This fear is of clandestine contamination of food or water supplies. The U.S. government has a built-in system to thwart these efforts in its routine public health safeguards.

Perhaps the best conclusion for this topic can be drawn from the U.N. report:

"Were these weapons ever to be used on a large scale in war, no one could predict how enduring the effects would be and how they would affect the structure of society and the environment in which they live. This overriding danger would apply as much to the country which initiated the use of these weapons as well as to the one which had been attacked, regardless of what protective measures it might have taken in parallel with its development of an offensive capability."

Civil Defense

Much has been written concerning civil defense in the event of nuclear attack. Information dealing with decontamination methods, survival techniques, and fall-out shelters are readily available to the citizenry. Less available is information dealing with CB attack or conventional attack.
Conventional attack defense has remained basically the same since WWII. These techniques and procedures, however, need to be revised and updated so as to meet the modern day needs of the United States. An educational program, in conjunction with nuclear and CBR defense instruction, should be initiated with the afore mentioned re-education of the American public.

Chemical and biological warfare civil defense should involve both physical as well as theoretical defense - an example of the former being vaccination. Chemical defense is harder to develop, but a level of protection must be sought whereby the advantages of a CW attack over a conventional attack would be eliminated and thus make a CW attack less attractive to the aggressor. 57

Civil defense should be low-key so that it could not be viewed as preparation for war. Current U.S. policy reflects this thinking in that civil defense spending for fiscal year 1976 amounted to less than 0.09% of the total Defense Department budget. 58 Part of this is due to U.S. peacetime thinking. Another reason is American perception of when civil defense would become necessary. It is felt that before civil defense measures would heed to be taken, a period of increasing political tension and actual military involvement would occur before there would be the possibility of an attack on the civilian population. 59 The peacetime requirements for civil defense, therefore, would be basically for the upkeep of equipment, updating of contingency plans, and disaster relief.
Numerous discussions have been conducted concerning the reorganization of U.S. armed forces. One of the most articulate theorists on this subject has been found to be General Maxwell D. Taylor (ret.), former Chairman of the Joint Chiefs of Staff under Kennedy and Johnson. General Taylor was one of the leading proponents of Flexible Response during his career. He has written several books on the topic of national security and organization of U.S. armed forces, his most recent and specific being Precarious Security.

In this book, Taylor sees U.S. strategic forces as having a deterrent role. Conventional deterrence, however, must display "...a demonstrably effective defensive posture." He goes on to say that, as conventional weapons improve, the methods of evaluating strategic vs. conventional capabilities may virtually disappear, and conventional weapons "...may come to play many of the roles now exclusively assigned to nuclear weapons." As an answer to "how much?" nuclear firepower should be maintained, Taylor gives this solution.

"As a means for expressing U.S. destructive capabilities, I would suggest adopting two notional units of measurements, one as a unit of urban destruction (UUD), the other a unit of military destruction (UKD). The first would be a combination of warheads capable of achieving a desired level of destruction with minimum overkill in a typical city area, say, five miles square, with population density, buildings, and industrial establishments comparable to those in major Soviet cities. The UUD would be an analogous warhead combination required for the destruction of a military area, say
two miles square, containing typical military installations, both hard and soft, such as command posts, barracks, an airfield, nuclear storage facilities, or missile launch sites."

Appendix G gives Taylor's views on how U.S. conventional forces should be structured for the future.64 Within this framework, the quick reaction force (QRF) would make the initial response, while the central reserve of four understrength divisions is built to full-strength by the Reserves and/or draft. This plan was made more specifically for the Army, although the Marine Corps was also included in the discussion.

After reading Taylor's rather simplistic discussion of a very complex subject, one is tempted to formulate one's own model—and this writer is no exception. The following is my perception of an ideal organization of U.S. armed forces. The discussion will touch on four innovations: the Unconventional and Counterinsurgency Command (UCC), the Conventional Warfare Command (CWC), the First Response Command (FRC), and the Situation Analysis Team (SAT).

The UCC would consist of such units as Special Forces and basic air, land, and sea units as is necessary to meet the requirements of unconventional and counterinsurgency (CCIN) warfare. It should be capable of operating in all environments and have fundamental training in conventional warfare as well. Its use would be determined by the SAT, which will be described later.
The CWC would comprise of contingent elements of what is considered to be a conventional force; including air, land, and sea units. Its responsibility would be to prepare for conventional warfare in any of the following environments: urban-suburban, desert, arctic, tropical, and naval.

The two above commands would be mainly training cadres yet, at the same time, be available should their particular expertise be needed. The main body would be found in the First Response Command (FRC) which would have elements of the UCC, CWC, and SAT. This would probably be the most valuable force as it would be the "first responder" (hence its name) to a situation. The present Marine Corps would be a good nucleus for such a force. Contingency plans should be kept and continually updated so that the FRC would be ready for many different situations.

The Situation Analysis Team (SAT) would be the planning and analyzing agents, as the name implies. Appendix H shows the different elements of the SAT and some of their responsibilities. These teams would be constantly evaluating world situations and possibilities of U.S. involvement. In doing so, SAT would have a liaison with the U.S. diplomatic corps in all areas and countries of the world. In the political element, foreign exchange officers should be encouraged to share their ideas and concepts as well as help develop new ones. Emphasis should be placed on the area's history, economy, and past attempts of indigenous governments. Should a conflict occur, SAT should have a quick response analysis ready for the FRC. A team would accompany the FRC and work with
the local government to develop an effective economy, government system, educational system, and military force. The political element should not be associated with the American political structure per se, but rather, should be free to help select a system most effective for that area's needs.

The steps in U.S. involvement under this structure would run something like this. Upon provocation or call for help, the U.S. government must make the fundamental decision as to whether American involvement is necessary or not. If it is found that it is necessary, the FRC is sent. The SAT on the spot and a larger main body arriving with the FRC would set up and present their evaluation. A call is then given for either the CWC or the UCC. At this time, the main body of the SAT withdraws and the original team remains to help the indigenous government. If the CWC is needed, the Reserves are called up and the draft started or accelerated. If the UCC is called and reinforcement becomes necessary, the FRC provides the reinforcement along with a SAT re-evaluation of the situation. A new FRC would be formed from the CWC as a precaution against new provocation in other parts of the world.

It would be naïve to assume that the above plan is foolproof and merits great consideration, yet it is one possibility for the future. Organizational plans are relatively easy to form, if one uses broad generalities in forming them. However, none of them adequately address themselves to a set criteria for American use of force.
Criteria for use

Each nation has different security needs just as each one requires different raw materials, amounts of food, exports, etc. to keep the country strong and healthy. Because of this, no two nations will have the same security needs nor can they be assumed to be so. For example, as amicable and close as the United States and Canada are, their needs are not exactly the same and to assume that they are could cause severe, irreparable damage to both nations - especially in the event of outside attack. In other words, what is good for the United States is not necessarily good for Canada and vice versa.

For the United States to effectively use its resources and armed forces, a "criteria for use" policy should be formulated. These criteria should not be automatic responses to a given situation, but they should lay down some guidelines to be used by decision-makers. First, U.S. needs should be evaluated and a priorities list of important items compiled. This list should be constantly studied and updated, and range from major threats to minor annoyances. For example, an attack on the United States would obviously be considered a major threat, whereas the interruption of the importation of Chinese paper fans would be considered, by most people, to be a minor annoyance.

After the completion of this list, a study should be made to decide at what extreme level of threat and/or deprivation the United States would be forced to defend itself. These decisions should not be considered automatic responses, but rather as
guidelines to measure the effects of a situation. A likely case of this would be an oil embargo of the U.S. for six months. This action against the United States might lead to the brink of economic breakdown and the accompanying social chaos. At that time, it would possibly be considered a matter of national security to forcibly break the embargo.

The levels of intolerance cannot be inflexible. If so, the U.S. would be turning the decision for involvement to the enemy; the opposition could raise its tire to violate the stated level of intolerance and thus prepare for the expected response. Flexibility must remain the key in deciding what and when an action is to take place.

Once a decision for response is made, it should match the provocation. A limited, though serious, threat to American national security should be met in kind. Likewise, if a threat is major, a major response should be made. In making a response, however, it should be kept in mind that an American victory or involvement could be perceived by other nations as an infringement on their national security. If this were to occur, escalation of the situation is a real possibility.

Another point to be remembered is that any nation seriously threatened with being defeated or absorbed by another will more than likely use whatever force is necessary to avert this defeat - up to and including nuclear weapons. This is perhaps the biggest change in warfare wrought by the harnessing of the atom.
if a modest amount of nuclear proliferation occurred, there would be the possibility that a nation faced with virtual annihilation by conventional means, could very quickly turn the tables in a conflict by the use of nuclear weapons. Thus the question of "how close to the brink of nuclear war can a nation go before it is in danger of falling off?" becomes a very real dilemma. If both nations have nuclear weapons, then tremendous destruction and needless killing might occur before the inevitable collapse of a beaten country. Add this to the possibility of blowing the world apart, and we can see that there is a definite need for some definition for the use of these weapons.

The future

The future in so unpredictable an area as national security is hard to visualize, but there have been many projections made. One of the first ideas for the future is the concept of "quick war". This is the belief that the next major war will be quick, vicious, and costly. If such a theory were to be proven true, then the strategy of using the United States as a staging area for reinforcement of Europe or wherever, is groundless.

Another intriguing idea is the re-introducing of the horse into national arsenals, the argument being that horses are not subject to oil embargoes or mechanical maintenance. The new emphasis on solar energy may also have an impact. Solar packs which could power tanks, trucks, missiles, etc. might be developed. Also, the hovercraft is already making its mark on armed forces in many parts of the world. Already mentioned were the VTOL and
STOL aircraft and their special adaptations, as well as the possibility of submerged warfare in the sea. "Killer" satellites have also been discussed in relation to destruction of reconnaissance and communications satellites. Research also continues in the military applications of the laser.

As can be seen, future discussion of national security has revolved around the "how" and not the "why" or the direction of national security. Unfortunately, the proverbial crystal ball is needed to discover these problems. Only time can tell us what the concert of national security will be fifty or one hundred years from now. Let it suffice to say that basic decisions made today will have definite and perhaps conclusive roles in forming the future.

**Conclusion**

After having spent a great deal of time studying and reading about national security, I was struck by many trends which seem to be woven into this complex subject. The most striking "thread" is the total lack of agreement among the various writers. This diversity, in one sense, is good for many different concepts need to be formulated and analyzed because of the world's constantly changing environment. In another sense, however, this various emphasizes that there are no solid answers to American national security needs and that everybody has their own perceptions as to what those needs are. I've often read that U.S. military leaders have been religious men and this could be part of the reason: no one really knows for sure that
what they are doing is absolutely fool-proof. In fact, it may not even be close.

Anyone who looks at national security at all has to be awed by the magnitude of the problem. There are so many variables to it that even a relatively minor factor can cause irretrievable damage. Every one of the factors have to be in "synch" before a perfect security policy is developed. Realistically, this will never happen, but efforts have to be made to keep the "machine" operating.

Basic problems face the United States in the future. The present inflation and decline in world dollar value has to be checked, our energy needs have to be filled by less vulnerable supplies, and an entirely new public attitude developed. This attitude needs to be one of solid belief in the United States. Blind patriotism is inherently dangerous and is not the loyalty of which I am speaking. Watergate, Koreagate, spending wastes, etc., have taken care of that by disillusioning the American people to such ideas or to the idea that the government is worthy of such devotion. Instead, the pain, frustration, and resultant maturity of the American people should be realized as positive products of the American experience—an experience from which we need to learn. We need to understand that as citizens of the United States there are certain requirements we have to fulfill, one of which is to watch and correct our government, when needed. Another is to know the U.S. Constitution and make sure it is kept "the supreme law of the land." Finally, we need to realize that
the United States, despite all of its flaws, is still worthy of our affection and allegiance.

This may sound like a repeat of something written earlier, and it is. I feel, however, that this point cannot be made strongly enough. Once the defense of American way of life is considered to be baseless, then the entire concept of this lifestyle is jeopardized to the point of meaninglessness. The bottom line consideration of any major security question must now, and continue to be, the definition given at the beginning of this paper: How does this affect "...everything considered to be a part of American life?"

This is the essence of American national security.
Appendices
### ICBMs: United States

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<tr>
<th>Name</th>
<th>Single Warhead</th>
<th>Alternative Warheads</th>
<th>Range</th>
<th>Deployment</th>
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<td>none</td>
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<td>54 tests</td>
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### ICBMs: Soviet Union

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<tr>
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<td>5-10 MT</td>
<td>none</td>
<td>10,000 km</td>
<td>about 300</td>
</tr>
<tr>
<td>Scarp SS-9</td>
<td>20-25 MT</td>
<td>MIRV</td>
<td>15,000 km</td>
<td>about 1000</td>
</tr>
<tr>
<td>Scrag SS-10</td>
<td>not known</td>
<td>3x4 MT (mod 4)</td>
<td>8,000 km</td>
<td>experimental</td>
</tr>
<tr>
<td>Sego SS-11</td>
<td>1 MT</td>
<td>3x? (mod 3)</td>
<td>10,500 km</td>
<td>about 1000</td>
</tr>
<tr>
<td>Savage SS-13</td>
<td>1 MT</td>
<td>not known</td>
<td>8,000 km</td>
<td>about 100</td>
</tr>
<tr>
<td>SSX-16</td>
<td>5 MT</td>
<td>MIRV capable</td>
<td>9,000 km +</td>
<td>development</td>
</tr>
<tr>
<td>SS-17</td>
<td>1-2 MT</td>
<td>MIRV</td>
<td>9,000 km</td>
<td>+</td>
</tr>
<tr>
<td>SS-18</td>
<td>20-25 MT</td>
<td>MIRV</td>
<td>10,500 km</td>
<td>?</td>
</tr>
<tr>
<td>SS-19</td>
<td>5-10 MT</td>
<td>MIRV</td>
<td>9,000 km</td>
<td>+</td>
</tr>
</tbody>
</table>

---

**Appendix A** 48
1. 200 feet
2. 500 feet
3. 1,000 feet
4. 1,500 feet
5. 2,500 feet
6. 5,000 feet
7. 10,000 feet

Appendix B
### SLBMs: United States

<table>
<thead>
<tr>
<th>Name</th>
<th>Single Warhead</th>
<th>Alternative Warheads</th>
<th>Range</th>
<th>Deployment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polaris A-3</td>
<td>3x200 KT</td>
<td>-----</td>
<td>4600 km</td>
<td>10 USN subs</td>
</tr>
<tr>
<td>Poseidon C-4</td>
<td>MIRV</td>
<td>-----</td>
<td>4600 km</td>
<td>31 USN subs</td>
</tr>
<tr>
<td>Trident C-4</td>
<td>8x100 KT</td>
<td>MARV</td>
<td>7000 km</td>
<td>development</td>
</tr>
<tr>
<td>Tomahawk (SLCM)</td>
<td>?</td>
<td>High</td>
<td>2400-</td>
<td>development</td>
</tr>
</tbody>
</table>

### SLBMs: Soviet Union

<table>
<thead>
<tr>
<th>Name</th>
<th>Single Warhead</th>
<th>Alternative Warheads</th>
<th>Range</th>
<th>Deployment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sark SSN-4</td>
<td>-----</td>
<td>-----</td>
<td>600 km</td>
<td>obsolete</td>
</tr>
<tr>
<td>Serb SSN-5</td>
<td>1 MT ?</td>
<td>none</td>
<td>1300 km</td>
<td>about 200</td>
</tr>
<tr>
<td>Sawfly SSN-6</td>
<td>1 MT ? (mod 1)</td>
<td>3xMIRV (mod 3)</td>
<td>3000 km</td>
<td>about 544</td>
</tr>
<tr>
<td>---- SSN-6</td>
<td>-----</td>
<td>-----</td>
<td>7800 km</td>
<td>D class subs</td>
</tr>
</tbody>
</table>

Appendix C
Conventional Forces: United States

<table>
<thead>
<tr>
<th>Service</th>
<th>Active Forces</th>
<th>Reserves</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Army</strong></td>
<td>789,000</td>
<td>212,400</td>
<td>1,001,400</td>
</tr>
<tr>
<td>Reserves:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Guard:</td>
<td>379,000</td>
<td></td>
<td>379,000</td>
</tr>
<tr>
<td>Army Reserves:</td>
<td>212,400</td>
<td></td>
<td>212,400</td>
</tr>
<tr>
<td><strong>Marine Corps</strong></td>
<td>192,000</td>
<td>33,500</td>
<td>225,500</td>
</tr>
<tr>
<td>Reserves:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Navy</strong></td>
<td>536,000</td>
<td>95,000</td>
<td>631,000</td>
</tr>
<tr>
<td>Reserves:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Air Force</strong></td>
<td>571,000</td>
<td></td>
<td>571,000</td>
</tr>
<tr>
<td>Reserves:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Guard:</td>
<td>94,600</td>
<td></td>
<td>94,600</td>
</tr>
<tr>
<td>Air Reserves:</td>
<td>54,000</td>
<td></td>
<td>54,000</td>
</tr>
</tbody>
</table>

- Armored divisions: 4
- Mechanized infantry divisions: 5
- Infantry divisions: 5
- Airmobile divisions: 1
- Airborne divisions: 1
- Armored cavalry regiments: 3
- 1 brigade in Berlin
- 2 special mission brigades in Alaska and Panama
- 9,000 helicopters
- 900 fixed wing aircraft
- 900 Nike Hercules and HAWK SAMs
- 365 combat aircraft
- Attack submarines: 78
- Aircraft carriers: 13
- Nuclear-powered cruisers: 5
- Light cruisers with SAMs: 2
- Cruisers with SAMs: 19
- Destroyers with SAMs: 34
- Destroyer escorts: 6
- Gun/Radar Ricket escorts: 58
- Patrol gunboats: 7
- Amphibious warfare ships: 62
- LCM ships: 3
- Logistics and support ships: 110
- 1200 aircraft
- Fighter/attack squadrons: 80
- Tactical reconnaissance squadrons: 9
- Electronic countermeasure squadrons: 1
- Special purpose squadrons: 5
- Tactical drone squadrons: 1
- Tactical transport squadrons: 15
- Heavy transport squadrons: 17
- Medical, weather, and SAR squadrons: 9
- Civil Reserve Air Fleet: 225 commercial long-range aircraft
<table>
<thead>
<tr>
<th>Description</th>
<th>Type</th>
<th>Maximum range</th>
<th>Maximum weapons load</th>
<th>Number Deployed (1975)</th>
</tr>
</thead>
<tbody>
<tr>
<td>long-range bombers</td>
<td>B-52 D-F</td>
<td>11,500 sm</td>
<td>60,000 lbs.</td>
<td>437</td>
</tr>
<tr>
<td></td>
<td>B-52 G/H</td>
<td>12,500</td>
<td>75,000</td>
<td></td>
</tr>
<tr>
<td>medium-range bombers</td>
<td>FB-111A</td>
<td>3,800</td>
<td>37,500</td>
<td>66</td>
</tr>
<tr>
<td>strike aircraft (including short-range bombers)</td>
<td>F-105D</td>
<td>2,100</td>
<td>16,500</td>
<td>1600</td>
</tr>
<tr>
<td></td>
<td>F-4</td>
<td>2,300</td>
<td>16,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>F-111A/E</td>
<td>3,800</td>
<td>25,000</td>
<td></td>
</tr>
<tr>
<td>land-based strike aircraft</td>
<td>A-7D</td>
<td>3,400</td>
<td>15,000</td>
<td>1000</td>
</tr>
<tr>
<td></td>
<td>A-4</td>
<td>2,050</td>
<td>10,000</td>
<td></td>
</tr>
<tr>
<td>carrier-based strike aircraft</td>
<td>A-6A</td>
<td>3,225</td>
<td>18,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>F-4</td>
<td>2,000</td>
<td>15,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A-7A/B/E</td>
<td>3,400</td>
<td>15,000</td>
<td></td>
</tr>
</tbody>
</table>
size of particle: 2 microns
(1 micron = 1/1,000,000 m.)

amount: 200 kg = 91 lbs.

area affected by an attack of:

- Bw: 5000-20,000 sq. km. = 3125-12,500 sq. mi.
- OW: 50-150 sq. km. = 31-95 sq. mi.
* By this time the draft and/or Reserves are mobilized to back this force up. This second QRF could be used as reinforcement for the original QRF or as an hemispherical reserve.
Situation Analysis Team

- **intelligence**
  - Where indigenous support lies
    - enemy motives
  - indigenous force capabilities
    - enemy capabilities
    - U.S. force requirements
      - CWC
      - UCC
    - economics
  - political structure
  - national attitude
    - ability of indigenous to govern
  - education
    - method
    - amount of political emphasis
Footnotes


3 Ibid., p. 111.

4 Kennedy, p. 45.


6 Ibid., p. 99.

7 Ibid., p. 101.

8 Ibid.


12 Endicott, p. 39.


14 Brown, p. 6.


18 Ibid.
19 Quenbeck, p. 74.
21 Ibid., p. 24.
22 Ibid., p. 25.
25 Pretty, p. 748.
26 Ibid., p. 25.
27 Ibid., p. 22.
28 Ibid., p. 24.
29 Bacheller, p. 724.
30 Ibid., p. 732.
33 Delury, p. 113.
34 Ibid.
35 Brown, p. 115.
36 Ibid.
37 Ibid., p. 35.
38 Schilling, p. 165.
39 Brown, p. 37.
40 Ibid., p. 39.
41 Schilling, p. 174.
43 Ibid.
44 Ibid., p. 5.
46 Brown, p. 41.
47 Ibid.
49 Brown, p. 39.
51 Brown, p. 39.
53 Ibid., p. 22.
54 Ibid., p. 36.
56 United Nations, p. 156.
57 SIFRI, p. 108.
58 Delury, p. 113.
59 SIFRI, p. 105.
61 Ibid., p. 6.
62 Ibid.
63 Ibid., p. 70.
64 Ibid., p. 100.
Bibliography


