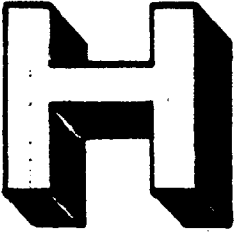
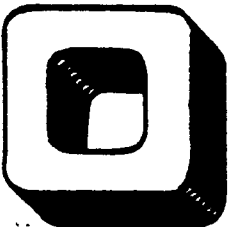


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79D The Concept of Stability (1980)

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ANALYTIC RESEARCH ON STRATEGIC,
TACTICAL AND DOCTRINAL MILITARY CONCEPTS

The Concept of Stability

Prepared for the Defense Nuclear
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HISTORICAL EVALUATION AND RESEARCH ORGANIZATION
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STRATEGIC, TACTICAL AND DOCTRINAL
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The Concept of Stability
Draft Report

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The report distinguishes between <u>international political stability</u> and <u>strategic nuclear stability</u> , providing a concise history of each concept. It then defines the following subcategories of strategic nuclear stability: deterrence stability, crisis stability, arms race stability, and escalation stability. The development of what is termed orthodox nuclear strategic doctrine, which holds that stability depends upon both nuclear superpowers' having invulnerable retaliatory forces and vulnerable societies,		

is traced from its beginnings about 1960 to the present. The role of stability, in the 1960s and 1970s, as the key link between arms control policy and weapons acquisition policy is identified and discussed. Alternative approaches to stability, including Soviet views, are summarized. An extensive, fully annotated bibliography is included.

EXECUTIVE SUMMARY

This report, based on a survey of the literature on the concept of stability, summarizes that literature and draws conclusions as to the usefulness of the separate concepts of stability of the international system and nuclear strategic stability.

Stability of the International System

As it applied to the international system in the 18th and 19th centuries, and to some extent up until World War II, stability included a high probability that there would be no large-scale war, that the system's major members would survive, and that no single nation would become dominant. Preservation of the system's members and of the basic power relationships of the system was fully as important as prevention of war, and, in fact, some war was seen as a necessary means of maintaining stability, which was not viewed as static, but as resilient, and tending to return the system to its original state, in accordance with the basic meaning of stability. Post-World-War-II political scientists continued to define the term in this way, including prevention of hegemony and preservation of the major members of the system as essential dimensions of stability.

The danger and destructiveness of nuclear war has recently led stability to be used to mean simply a low probability of war. While there can be no argument with the weight of this consideration, if stability is to be implicitly defined only in terms of war avoidance, it must be recognized that the international system could move from a relatively stable, loose bipolar system to a relatively stable system in which the Soviet Union exercised hegemony, without ever passing through a period of instability.

Nuclear Strategic Stability

From early in the nuclear age, an invulnerable retaliatory force in the hands of each nuclear power has been considered

the prime essential for nuclear strategic stability. By the mid-1960s the idea that stability also required populations vulnerable to nuclear attack had been added to the stability canon. Maximum stability was theoretically achieved if both nuclear superpowers possessed invulnerable retaliatory forces and vulnerable populations. To express the same idea in another way, whatever contributed to a first-strike capability was destabilizing, and whatever contributed to a second-strike capability was stabilizing.

By the mid-1970s this concept had been elaborated upon and codified to such an extent that almost any feature of any weapons system could be, and was, classified as either stabilizing or destabilizing. Following is a listing of some weapons characteristics classified in this way. It may be noted that some of the "stabilizing" characteristics work to insure the survivability of the retaliatory force, others to insure its ability to hit countervalue (population and industry) targets, and others to prevent its hitting counter-force (missile) targets.

<u>Stabilizing</u>		<u>Destabilizing</u>
mobility	} of unfired missiles	accuracy of missiles
hardening		large numbers of missiles
dispersion		high yield of warheads
concealment		strategic antisubmarine warfare programs
warning system excellence		
command-control-communication survivability		ABM or bomber-network protection for one's population
active defense of missiles by ABMs		unhardened (or otherwise vulnerable) missiles
penetration aids for missiles		
long flight time of missiles		
safeguards against accidental firing of missiles		

Problems in Applying Nuclear Strategic Stability Doctrine

Not all defense analysts have accepted that nuclear strategic stability is desirable, and not all who believe it is desirable have accepted the tenets of orthodox stability, as outlined above. One of the most telling arguments against making stability the prime goal of the nuclear strategic relationship with the Soviet Union is that, by making a first strike impossible for the United States, it logically denies the protection of US strategic nuclear weapons to US allies as a deterrence against conventional or nuclear attack on them by the Soviet Union.

In any case, orthodox stability depends upon cooperation by the Soviet Union in creating invulnerable retaliatory forces and vulnerable populations for both sides. Therefore, the concept of this kind of stability has been badly shaken by strong evidence, accumulated during the past decade, that the Soviet Union does not share US views on stability and does not plan, acquire, or deploy weapons in accordance with them.

Conclusions

This report draws the following conclusions:

- Stability of the international system is not an adequate summation of US foreign policy goals, unless stability is defined to include prevention of hegemony and preservation of the major actors in the system, as well as prevention of war.
- Nuclear strategic stability -- defined as a probability of nuclear war that approaches zero -- may not be the most desirable goal of US nuclear strategic policy.
- Even if stability is the most desirable goal of US nuclear strategic policy, it may not be best achieved by following orthodox stability doctrine, as codified in the early and middle 1970s.
- Even if orthodox stability doctrine is the best mechanism for achieving stability, it will not work, under its own rules, if
-- the opponent does not accept it as best for both sides and cooperate by applying it to his own forces;

-- as a result, one's own retaliatory force becomes vulnerable and the opponent's society becomes significantly less vulnerable than one's own.

- The logical approach to a theoretically unstable nuclear strategic situation is to restore the invulnerability of one's retaliatory force.
- Although restoring the invulnerability of the retaliatory force may require increased arms expenditure, there is no evidence that this expenditure increase constitutes arms racing in any meaningful sense, and, in fact, there is no evidence that increases in arms expenditures are inimical to nuclear strategic stability. Although arms race stability, or arms stability, is frequently treated as identical with nuclear strategic stability, or as a subcategory of it, the two concepts are different and only tenuously connected.

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INTRODUCTION

Stability is one of the most frequently cited goals of US policy, mentioned almost as often as deterrence and security in official statements, and probably even more often than peace. However, it is used with a variety of meanings, is often used with a vague or unclear meaning, is officially undefined, and has been subjected to very little serious analysis. This paper will attempt to clarify the principal meanings of the term; will briefly trace the history of the concept since World War II; will outline and evaluate the various requirements for strategic nuclear stability as set forth in the literature; will examine categories of nuclear strategic stability, including crisis stability and arms race stability; will assess the strengths and weaknesses of stability as an expression of US policy aims, and will make recommendations on definitions and use of the term stability.

EXAMPLES OF USES OF THE TERM

Following are some examples of ways in which the term stability has been used recently in official US documents and by US officials:*

*All underscoring has been added in all the examples quoted in this section.

- The Department of Defense Annual Report for Fiscal Year 1981 lists stability as one of four "other objectives" of US strategic policy, following deterrence -- the "fundamental objective." (In addition to stability the "other objectives" are essential equivalence, arms control, and the TRIAD.) Two distinct kinds of stability are discussed in the Defense Report:

Long-term stability in the strategic balance . . . is maintained by insuring that the balance is not capable of being overturned by a sudden Soviet technological breakthrough. . . . Crisis stability means insuring that even in a prolonged and intense confrontation the Soviet Union would have no incentive to initiate an exchange, and also that we would feel ourselves under no pressure to do so. (p. 69)

- In testimony before the Senate Committee on Foreign Relations on March 27, 1980, the Secretary of State listed eight "central American interests for the coming years." In listing two of these interests he mentioned stability in a context that made it clear that stability is an assumed goal of policy:

A third interest -- controlling the growth and spread of nuclear and other weapons -- enhances our collective security and international stability. . . .

The advancement of human rights is more than an ideal. It, too, is an interest. Peaceful gains for freedom are also steps toward stability abroad and greater security for America. (US Department of State 1980:2)

- In the same testimony, the Secretary quoted the President's 1980 State of the Union address as follows:

. . . when peoples and their governments can approach their problems together -- through open, democratic methods -- the basis for stability and peace is far

more solid and far more enduring. (US Department of State 1980:8)

● In a February 1976 statement to Congress, the Director of Defense Research and Engineering said

A major consideration in designing strategic forces is stability, to limit the likelihood that a war would be initiated in a crisis in order to achieve the advantage of striking first. Our forces should not be such as to invite attack. . . . Thus, we focus on improving the survivability of our forces to a disarming first strike attack, and on increasing the capability of those forces which do survive. . . . Not only is it our policy to control escalation to the lowest level possible; our forces are being designed so accurate placement of smaller yield weapons reduces collateral damage. . . . The objectives of arms control are quite consonant with objectives which we pursue in the design of forces. (US Congress 1977a:18-19)

● The arms control impact statements (ACISs) for Fiscal Year 1980, statements which Congress requires the Executive Branch to submit for major defense programs, included statements on the expected impact on global and regional stability of 19 major programs. It should be noted that stability was discussed specifically at the insistence of Congress. (US Congress 1977a:iv-v, 20) The following excerpt is from the ACIS for the SSBN/SLBM (submarines with submarine-launched missiles) program:

As U.S. silo-based ICBMs become more vulnerable to Soviet ICBMs, U.S. SSBNs could come to assume increasing importance in guaranteeing the secure U.S. retaliatory capability necessary to deter nuclear attack upon this country or its allies, and to help insure a fundamental strategic stability. Consequently, the Trident SSBN/SLBM programs are, with one possible exception, Trident II, extremely important to U.S. security and to strategic stability.

The impact of potentially very accurate Trident II missiles on strategic stability in the early 1990s is

less clear. . . . Some believe the overall impact of Trident II on strategic stability could have some de-stabilizing effects. . . . This would be the result if the Soviets believed that Trident II's projected time-urgent hard-target-kill capabilities added significantly to similar capabilities which the Soviets could attribute to planned and possible improvements to Minuteman and/or the MX, if deployed. On the other hand, improved U.S. time-urgent hard-target-kill capabilities could encourage the Soviets to reduce their present emphasis on silo-based ICBMs [and thus increase stability]. (US Congress 1979:54)

In addition to these examples from official documents, a few samples of use of the term stability from defense-community and independent analysts may be given:

- A panel of scholars and government officials, discussing regional stability at the 1977 National Security Affairs Conference of the National Defense University, first defined stability as "nonviolent change in social, political, and economic forces and in a system of conflict resolution."

(US National Defense University 1977:43) However, the panel apparently found that this definition was not adequate. The rapporteur's report states:

Regional stability, never questioned as a desirable US objective, was redefined as a more fluid situation than often assumed, amounting to regional change whose outcomes favor the United States. (US National Defense University 1977:49)

- Defense analyst George Quester, writing in 1978 on the advantages of precision guided munitions (PGMs) for the defense of NATO, includes a good deal of discussion on the inherent stability and instability of specific weapons. In a context of theater war, he states that weapons that can

be made mobile, and thus used effectively on "territory they might try to move into," are destabilizing, and immobile weapons that are most effective on the "territory they originally occupy" are stabilizing. (Quester 1978:17)

- To go back to one of the earlier works on nuclear strategic matters, Morton Kaplan wrote in 1958

If one is not willing to extend the war to prevent an enemy victory, why should one not give up the objective if the enemy is willing to extend it when he cannot gain victory by non-nuclear means? Unwillingness [to extend the war] is inherently unstable if resources are equivalent. . . . A policy of limitation . . . gives a strategic advantage to an opponent and is inherently unstable. (Kaplan 1958:35)

Following are some additional examples in the form of brief quotations:

- Stability is achieved when each nation believes that the strategic advantage of striking first is overshadowed by the tremendous cost of doing so. (Brodie 1959:303)

- We shall define stability [of the international system] as the probability that the system retains all its essential characteristics; that no single nation becomes dominant; that most of its members continue to survive; and that large-scale war does not occur." (Deutsch and Singer 1964:390)

- The dimension of stability [is] the assurance against being caught by surprise, the safety in waiting, the absence of a premium on jumping the gun. (Schelling 1966:235)

- . . . the maintenance of strategic stability -- in terms of minimizing both the possibility of nuclear war and the possibility that nuclear arms may be used by either side as a means of decisive pressure in key areas of the world. (Nitze 1976a:207)

What order can be brought out of these varied examples?

In the first place it must be made clear that two separate

kinds of stability are being written about; some examples refer to one kind and some to the other. These may be called international political stability and strategic nuclear stability. In the examples above, the Secretary of State, the President, the National Defense University panelists, and Deutsch and Singer are all talking about international political stability. The other writers are dealing largely or entirely with strategic nuclear stability.

Although the present paper will focus on strategic nuclear stability, it seems important to devote some attention to international political stability, for the following reasons:

- The recent histories of the two concepts are closely intertwined. The term stability came into common use for both concepts at about the same time, in the post-World War II period. Although stability is a term with a long past, it was not often, if ever, used in official US statements to describe national hopes and goals for the international system before the 1950s. It was also at about this same time that "stability" came to be considered the ideal arrangement for the strategic nuclear confrontation with the Soviet Union.

- There is some confusion and overlapping in the use of the term stability for the two concepts, and it therefore seems best to attempt to clarify the distinctions. For example, the authors of the Fiscal Year 1980 ACISs, instructed

to assess the impact on stability of various weapons systems, find themselves weighing the (politically) "stabilizing" effects of deploying more and larger missiles and thus achieving a more equal balance of nuclear power with the Soviet Union, on the one hand, against the theoretically "destabilizing" effects on strategic nuclear stability of deploying these same missiles.*

- Finally, a great deal can be learned about strategic nuclear stability from an exploration of the basic stability concept and the way it has been applied to international political stability.

HISTORY OF THE STABILITY CONCEPT

To discover what is basic about the concept, it seems most useful to examine the history of its use.

Meaning of the Term Stability

Stability is a term with a long history, and has been used at least since the late 15th Century to apply to governments, countries, and institutions, indicating that they have "immunity from destruction or essential change."** Almost from the beginning, and certainly since the 18th Century, the

*US Congress 1979:18. The stability issues surrounding the MX, which is being discussed in the cited passage, are of course much more complicated, but this is a fair summary of the specific point being made in the ACIS.

**This, and all definitions and examples not otherwise identified, are from the Oxford English Dictionary (OED), selected for use here because of its historical emphasis and wealth of examples from many time periods.

term stability, whether applied to the physical world or political entities, has had special connotations that became an integral part of it. The "immunity from . . . essential change" was not the result of accident or protection by outside force but was the result of the inherent nature, or construction of the stable object. Furthermore, the stable object was not necessarily unmoving and unchanging. The important thing was that changes were not catastrophic, and that after a shock or period of agitated movement, the object returned to its original condition. Following are some 19th Century examples: "The true function of the root is to give stability to the tree." (1894) "The statical stability of a ship may be defined as the effort which she makes when inclined by external forces acting horizontally, and held steadily at that inclination, to return towards her natural position of equilibrium." (1877) ". . . whereby all perturbations eventually reduced themselves to oscillations on each side of a mean position, and the stability of the solar system was secured." (1869)

Morton Kaplan has clearly explained this essential aspect of stability -- the fact that the stable object resists shocks and rights itself after being disturbed -- as it applies to political systems. He notes that while physical objects can have a stability that is purely mechanical, as when a seesaw returns to its original position after a disturbance, physical

stability can also be achieved by a homeostatic, or "steady-state" process. In a homeostatic process, some variables continually readjust to keep other variables within given limits. This is the way a thermostat operates to keep a temperature reasonably steady, and the way an automatic pilot operates to keep an airplane level. Kaplan states that it is homeostatic processes that keep political systems stable, with various actors within the system taking action to bring the system back on an even keel if other actors tip it off center. In the international political system, the actors are, for the most part, nations.*

Kaplan also discusses a special kind of stability, which he calls ultrastability, that seeks and finds a new equilibrium if the old is irretrievably lost. In the case of the automatic pilot, if it should be improperly connected to the airplane in such a way that a slight shift of the plane from level flight is not corrected but rather accentuated, sending the plane into a spin, an ultrastable homeostat could adjust its own behavior to this event and re-establish level flight. (Kaplan 1957:7)** The implications of this concept for political systems and the international system are clear. Kaplan says of "ultrastable" systems that they

*Strictly speaking, the international system is not a political system, since it has no laws, constitution, or means of enforcing rules on its members. (See below, pp.19-20.) In this paper, however, to avoid greater awkwardness and confusion, reference will sometimes be made to the international political system.

**Kaplan cites W. Ross Ashby, Design for a Brain, Wiley, 1952, p. 99, as the originator of the concept of ultrastability.

"search" for stable patterns of behavior. They may make internal changes or may attempt to change the environment. They reject unstable patterns of behavior. Periods of transitional adjustments . . . may represent attempts to find new patterns of stable behavior after the old patterns have proved unstable for some reason. Such processes are those of an ultrastable system. . . . (Kaplan 1957:7)

This is the kind of stability that one would wish for newly independent nations, and for nations and regions entering the contemporary economic age, since it is certain that the old equilibrium cannot be regained, and that thus stability in the sense of a ship's righting herself after being heeled over is not attainable.

It should be noted at this point that for intelligent discourse on stability it is absolutely essential that variables be defined. (Kaplan 1957:6; Deutsch and Singer 1965) What, precisely, is it that is stable? For example, if one is discussing the stability of an international system, one has to make clear whether a low level of armaments expenditure, or a low frequency of war, or the degree to which the independence and sovereignty of all the major system members are preserved, is to be the criterion for stability. This requirement is very frequently violated, with consequent confusion. Deutsch and Singer are unusual in stating their definition clearly and explicitly, in the passage quoted on p. 11, above: Stability is the probability that no single nation will become dominant, that most of the members will continue to survive, and that large-scale war will not occur.

These authors go on to say that a probability of 90% to 99% seems intuitively about right for a system to qualify as stable. (Deutsch and Singer 1964:390) Although assessing the numerical probabilities in specific cases would not be easy, still it is clear what these writers are discussing when they speak of stability.

Glenn Snyder has pointed out that there are what he calls three subdimensions of stability: lack of tendency toward an arms race, lack of tendency toward war, and tendency toward preservation of the independence of the major actors. He points out that the focus was on the last subdimension in the pre-World-War-II past, with war and armament acquisition treated as ways of preserving this last aspect of stability. More recently the emphasis has been strongly on the second subdimension--the tendency, or lack of tendency, for the system to produce war. (G. Snyder 1965:197)

In fact, one major problem in dealing with the stability concept is that a great many -- probably a majority of -- writers and officials using the term today use it simply to mean "a low probability of war," not explicitly defining the term and not considering as part of their implicit definition the matter of whether or not there are major changes in the relative power positions of members of the system.

The Balance-of-Power System

Closely associated with the concept of stability in the international system -- or international political stability