

MEMORANDUM FOR: DCI  
DDCI

- STILL TO Be Provided
  - List of Actions you have taken to improve Intelligence
- Memcon on SOVA Discussions with PFIAB on Soviet Defense Spending



25X1

Date

FORM 101 USE PREVIOUS EDITIONS

DCI

PFIAB Meeting

14 March 1984

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SA/DCI/IA

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**SECRET**

Your Meeting with PFIAB

14 March 1984

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12 March 1984

MEMORANDUM FOR: Director of Central Intelligence  
Deputy Director of Central Intelligence

FROM: SA/DCI/IA

SUBJECT: Your Meeting with PFIAB, 14 March 1984

1. You are scheduled to meet with the President's Foreign Intelligence Advisory Board on 14 March from 9:15 to 11:00 a.m. We have not received a detailed agenda but have been informed privately that the PFIAB would like you to address at least the following two subjects: Soviet leadership transition and, in particular, charges made in a Jack Anderson column on that subject; and the situation in Lebanon.

2. This book includes the following materials for your use:

-- DCI Briefing. The presentation contained at Tab A was prepared by [redacted] the NIC. He treats not only the two issues that PFIAB suggested you might address but also other issues of topical interest. These include the Iran-Iraq war; increased Soviet military presence in Vietnam; the Salvadoran elections; the situation in Mexico; Soviet responses to NATO's INF deployments; and the prospects for decreasing the level of violence in southern Africa. 25X1

-- At Tab B is a copy of the tentative agenda for the two day session. You will note that Secretary Shultz is expected to attend and he apparently has been asked to address a number of subjects. At Tab C you will find a list of the subjects that he is expected to address. These include a number of subjects dear to our heart, including hostile foreign intelligence presence, equivalency and reciprocity in diplomatic representation with the Soviet bloc; political analysis of the USSR; counterterrorism; and Mexico.

-- At Tab D are talking points prepared [redacted] on the Red Team as mandated by NSDD 65 and 121. Also included at this tab are the views of the Department of State on this subject, as well as our critique of their position. 25X1

-- At Tab E is a list of the actions we have taken in recent times with respect to CC&D. [redacted] 25X1

-- At Tab F are talking points on the hostile foreign presence issue. 25X1

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-- At Tab G is a draft copy of FBI Director Webster's presentation before the Senate Subcommittee on Security and Terrorism scheduled for 14 March. It should give you a pretty good idea of what he will say when he appears before PFIAB.

-- At Tab H is a copy of [redacted] agenda for combatting terrorism. I am told that Bob Kupperman of Georgetown will discuss counterterrorism during his session. Also at Tab H is a little bit of background on Kupperman including some of his past writings.

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-- At Tab I is a copy of the key items of correspondence from PFIAB, Bud McFarlane and yourself (DCI) concerning [redacted]

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-- You will also find at Tab J a copy of the key portions of the package that I prepared for you last month on the Intelligence Community's performance in handling the Soviet leadership transition. This includes the Jack Anderson column mentioned in paragraph one above.

3. Other items of interest: at Tab K are talking points prepared by SOVA [redacted]

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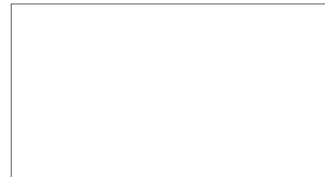
[redacted] who is Chuck Briggs' Executive Assistant, indicates that his counterpart at PFIAB suggested that we might want to have PFIAB raise this subject on our behalf, with the Secretary. It would seem to me that it might be wiser to hold this for one of your luncheon meetings rather to in effect do an end run around the Secretary of State. Nonetheless, I have included it in case someone asks you your opinion on this matter.

4. Finally, at Tab L is a tabulation of all the actions we have taken to support PFIAB during the 7 January to 9 March timeframe; while at Tab M is a copy of your talking points for the last PFIAB session.

5. You should be aware that Fritz Ermarth is scheduled to meet with some of the PFIAB members on Tuesday afternoon; they will discuss the Soviet leadership transition. I have asked Fritz to prepare a memorandum on his session so that you will have it before your meeting on Wednesday.

6. If I can do more to help in preparing for this meeting, please call.

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PFIAB 14 March 1984

1. CHERNENKO'S ACCESSION

- Source of support
  - Ustinov, Gromyko, Tikhonov
  - Regional leaders and government ministers
- Emphasis on collectivism
- Trappings of office
  - Head of Defense Council and Politburo
  - Defines of policy lines
- Key indicators of staying power
  - Chairman of Supreme Soviet
  - Central Committee plenum
- An interim ruler, no bold new policies likely

US INTELLIGENCE PERFORMANCE

- Fundamental difficulties
  - Lost sources [redacted]
  - Less open source Soviet political information
- Improvements underway
  - More and better analysts
  - Investigation of alternative views and hypothesis
  - Seeking high-quality [redacted] sources

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## 2. MIDDLE EAST

- Iran/Iraq war
  - Iran efforts to oust Iraqi regime
    - Inflict a military defeat
    - Flood Baghdad with refugees
  - Iraq seeks to influence Iranian leaders to quit war
    - Inflict a military defeat
    - Damage economic targets
  - Iran may attack Gulf states
    - Targets oil facilities and desalination plants
    - Commando and/or air raids effective
    - Gulf states have porous defenses
  - Iranian impact probably minor
    - Most likely--2-3 million barrels per day
      - covered by inventory, with a temporary spot market increase
    - Unlikely but possible-- 5 million barrels per day
      - could severely impact west
- Lebanon
  - US and Israel separated from Lebanese government
    - Assad trying to impose order on factions
      - Christians fear a Muslim state
      - Shiites want a share of the power
      - Druze and Sunnis now confront Israel
    - Geneva talks will legitimize Syrian control

## 3. SOUTHEAST ASIA

- Soviet military presence at Cam Ranh Bay
  - Addition of armed BADGER aircraft--5 strike, 2 tanker, 1 ECM, and 1 photo recce
  - Naval presence--4 attack subs. 1 frigate, 1 minesweeper, and auxiliaries
  - Within range of US forces
    - Clark Air Base
    - Subic Bay Naval Station
    - SLOC between Pacific and Indian Ocean
  - Influences US Asian strategy

## 4. SALVADORIAN ELECTIONS

- Presidential election 25 Mar
  - Six major parties--1 centrist, 5 rightist
    - Centrist (PDC) favored
    - Rightist ARENA and PCN strongest contenders
  - Runoff of top two in April or May
  - No widespread insurgent effort this time, but will take advantage of opportunities
- Death squads
  - Leaders out of official positions
  - Ceased claiming responsibility for deaths
  - Some decrease in number of bodies in the streets
- Election results
  - Nearly 80% should vote



- PDC should get over 40%
- Probable runoff with ARENA

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INF RESPONSES

- Europe
  - SS-20 base construction resumes
  - SS-12/22 moved forward
- Atlantic
  - Three D-Class SSBN in Y-Class area
- Pacific
  - One D-Class SSBN in Y-class area

CC&D

- NIO for Foreign Deception and Intelligence activities
  - "Hap" Hazzard incumbent
  - Chairs Deception/Denial Analysis Committee

- Analysis units in community agencies
  - staffed by experienced personnel
  - trained by NIO
- NIE and several studies scheduled this year

SOUTHERN AFRICA

- Opportunity for disengagement
  - Angola/Namibia
    - Luanda must control SWAPO
    - Pretoria suspended withdrawal based on SWAPO violations
  - South Africa/Mozambique non-aggression pact to be signed 16 March
  - Soviets suspect US intentions, fear loss of influence in the region

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VOLUME VI ♦ NUMBER 1

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SIGNIFICANT  
ISSUES ♦ SERIES

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Technological Advances and  
Consequent Dangers:  
Growing Threats to Civilization

by  
Robert H. Kupperman

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Center for Strategic & International Studies  
Georgetown University • Washington, D.C.

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A Paper Presented at the  
International Symposium on the Coevolution of  
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## About the Author

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Dr. Kupperman has served the government as the head of the transition team for the Federal Emergency Management Agency, as the chief scientist for the Arms Control and Disarmament Agency, and as assistant director for government preparedness in the Office of Emergency Preparedness. He currently consults widely on national security issues and is a leading expert on counterterrorism, advising both the United States and foreign governments.

Dr. Kupperman is a member of the Army Science Board and a fellow at the Los Alamos National Laboratory. His recent works include *Terrorism: Threat, Reality, Response* (Hoover, 1979). He holds a Ph.D. from New York University.

## Technological Advances and Consequent Dangers

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In reviewing the history of humanity, it is striking how enormously compressed and foreshadowed is the period marked by "civilization." Fossil records separate early man from animals on the basis of toolmaking—the first example of technology, or the use of artifacts to extend the dimensions of human life. That fossil record extends back for a quarter of a million years, but not until the past hundred centuries or so has civilization been the organizational principle of mankind.

For almost all of those 10 thousand years, the threats to life have been inherently self-contained and self-extinguishing. The historic record is rife with evidence of natural cataclysms: vulcanism, seismic convulsions, climatic excursions, and epidemics are all commonplace occurrences in the short span of the history of civilization. Man-made disasters such as wars and their aftermath are so common as to provide a natural framework around which political and social history has been constructed and taught for centuries.

But the historical record makes it clear that, until recently, neither man nor his civilization has been truly threatened in the sense of absolute survival. Pre-civilized man was mobile and thin-spread across a widely differing range of physical environments. As these environments altered, slowly or catastrophically, man adapted or died—but on a very local level. Elsewhere, other men, the majority of the individuals of a minority species, always seemed to have flourished and expanded, pressing relentlessly outward against the constraints of geography. With the advance of technology to hold the environment at bay came sedentary organized civilization, along with the greater threats to life posed by the survivalist elements that characterized that organization—the proximity of large numbers of individuals and social dependence on immobile long-term assets like farms and forests.

With the increased vulnerability of this "investment" phase of civilization to drought and flood, blight and disease, erosion and exhaustion, war and conquest, the scale of the threat posed remained within the culture's ability to face it. Even the worst blows dealt to civilization then were dissipated by the distribution of cultural assets, by the existence of physical and psychological "hinterlands," and by the cushioning function of institutional diversity and independence. The list of threats to life made good is as long as written



history itself—the consumption of the cedar forests of Lebañon, the fall of Rome, the Black Death, the Spanish destruction of meso-american society, the Mongol conquest, the desertification of the North African coast. But all of these, important as they have been for the future that followed, and large as they must have loomed to observers, were nonetheless self-extinguishing flames in a larger context. Even the great war of 1914 can be assessed in parallel terms: a disaster, tragically costly in lives, but still an incident that civilization was able to comprehend and that culture was competent to repair. Diversities, distances, and differences, systemic inefficiencies of civilization in themselves, provided the recuperative forces necessary to maintain continuity.

Since the Great War, technology has grown at an almost exponential rate, as has the human population that grows increasingly dependent upon it. Mankind has, in the ecological sense, expanded into every suitable niche, and even into some not so suitable. It has been technology—whether the wooden dibble of Africa or the permafrost engineering of Siberia—that has allowed man and his civilization to expand so far.

It has been other technologies that have permitted civilization to stay and prosper throughout its global range. These technologies are so pervasive as to be “transparent” to the casual observer, so much part of civilization as to seem virtually invisible. The extension of technology in the service of civilization has perhaps reached the point of no return, at which the interlocking infrastructure that has evolved is so taken for granted and at the same time so complex as to allow for no realistic alternative.

Think about some of these interlocking technologies, their development and their implications. Any example quickly reveals a fragile dynamic cycle of production, transportation, and consumption. Bread for sale in a major urban American area contains wheat grown in Alberta, milled in Chicago, baked in New Jersey, and consumed in New York. A century of agricultural research has bred the grain to resist cold and blight; the steel and automotive industries provide the tractors and trucks to plant, harvest, and ship; the chemical and medical industries provide the safe insecticides and preservatives and leavenings and flavorings necessary to an economical product; a massive road and rail system allows bulk transport; clean water and cheap electricity are a major element in production, storage, and delivery; and the end item, a one pound loaf of white bread, sells for 69 cents—or 13 minutes of labor at the current minimum wage.

The price of that efficient, economical infrastructure is leanness, and the cost is vulnerability to disruption. The same holds true in all great conurbations: modern technological efficiency in the provision of food, water, energy, medicine, transport, and communication has been oriented toward economic affordability without much attention to complex network fragility. In developing technological tools to manage environment, materials, and energy to the ends of higher qualities of human life, civilization has created an infrastructure whose success and importance to social survival make it, ironically, one of society's greatest weaknesses.

It is a truism to reflect that the more advanced a civilization becomes, the more complex and interdependent its technological base becomes. Industries and institutions competitively barter their way into efficient interdependence so that no single function can stand alone. That same efficiency dictates that technological infrastructures interlock, both by hazard and by choice, and also leads to rigid interconnections to assure reliability.

Those rigidities also assure that failures or problems that begin at a modest scale can propagate along and across interlocking networks with exponential effects. The greater a society's dependence for survival on its technological infrastructure, the greater its vulnerability to a collapse triggered naturally or artificially at a key point. Perhaps technology is allowing the maintenance of human life and civilization at an artificially high level, or perhaps mankind is in danger of losing those hinterlands so necessary in the past to recover from disaster.

With the life support system of society so entwined, it seems certain that the propagation speed and range of a major modern disaster will exceed the absorption capacity of the system. Even the most centrally managed of human societies cannot cope with fundamental system failures multiplying at a biological rate. The analogy of a stressed society to a stressed organism is valid: a critical point is reached, a cascade of organ-system failures ensues, and death comes quickly.

It has been evident for many years that the psychological reserves of human society were being inexorably eroded by the tensions of modern life, and it is now also clear that the physical underpinnings of that life are at risk, placing in jeopardy the society they support.

If we seek to characterize the families of massive failures to which our modern infrastructures are liable, the catalog becomes as complex as the technologies themselves. Every network can be attacked successfully at many points, unraveling the macrosystem at an exponential rate. It may be more useful to identify the next tier upward

of the effects of technological vulnerability, to address the question of what are the most serious threats to life by technological interdependence and related psychological unpreparedness for disaster.

The easiest threat to recognize is one that has always been with humanity but only now looms as a simultaneous danger to all populations — hunger. Technology has thus far only deferred the end condition of the Malthusian equation by the near-magic of agricultural productivity. Carefully designed “green revolution” crop types, aggressively pressed into cultivation in the large areas of the globe still being only marginally cropped, hold out the promise for far better nutritional food stocks in the future than today. Institutionalized management, rather than predatory exploitation, of both traditional and unconventional oceanic food supplies can add greatly to that stock. Minimal changes in preservation and storage efficiencies can have large leverage effects on food availability.

The essence of the Malthusian dilemma, however, is the biologic rate of human population growth, a rate made possible by the technological advances in biology, medicine, nutrition, and sanitation, as much as food production. Much of that production has been advanced at the expense of genetic diversity and robustness in high yield crop plant material, which opens the threat of evolving blights and diseases running unchecked across hemispheric agricultural zones. Losses in these circumstances could be catastrophic.

If the problem is “exponential,” only a non-linear solution may fit, and no one can confidently predict such a long-term trend in food production, much less storage, processing, and distribution. It must be underlined that the processes at work here are unidirectional: we cannot resolve the problem by proscribing a subset of technology or its applications in order to revert to a lower threshold of danger, or by trying to rely on starvation as an answer to hunger. Even centrally managed societies cannot reverse human expectations and survive.

A second and increasingly recognized danger, reinforced by the interconnection and interdependence of modern society, is that of disease, especially at the level of the epidemic and pandemic. The science and technology of medicine—the antibiotic revolution—are slowly suppressing the need for (and perhaps even the body’s ability to produce) the range of antibodies once the common heritage of civilized man. The loss of these natural defenses, coupled with the natural social drive to preserve and extend life at both ends of its spectrum, is leading to a swollen population inherently susceptible, inherently under-protected, and therefore inherently, and increasingly, at risk in the event of a rupture in our thin biochemical armor.

Add this problem of reduced immunity to the next tier, that of evolving disease organisms that have become sophisticated in defeating the once effective armamentarium of standard antibiotics. The evolutionary rate of microbes threatens to exceed the rate of medical control development, and resistant strains of diseases are now endemic in hospitals and clinics around the world.

The third tier, added to weakening populations subjected to a growing variety of pathogens, is the loss of natural quarantines. Today, it is possible to reach any corner of the globe virtually any day, and the exigencies of commerce and politics require that most of the world's population be in physical communication at all times. The airplane is the most visible and rapid of such links, but it is the daily global interchange of organic materials—from food to cosmetics, from paper to paint—that assures an eventual homogeneity of human risk. Man and the mobility of his civilization are the modern epidemical vectors of greatest importance.

On this already stark picture of mankind at self-imposed risk, we must draw two more specters: one, the explosive appearance of new, treatment-resistant diseases from whatever sources, is suggested by some of the serious waste product problems just now being uncovered in industrialized countries, as well as by the still-mysterious "immunity deficiency syndrome." Two, the history of human experimentation at the frontiers of the unknown is such as to almost guarantee contaminant releases into the natural environment, no matter what precautions are taken. What this habit of conditioned carelessness means in an era of biological research and genetic engineering cannot be predicted, only feared. That law of human behavior that suggests that things do go wrong—and in the least convenient way—has uncomfortable implications for life in the face of modern biology in the hands of the uncaring.

Civilization has been spared these threats, at least in their most extreme forms, but the potential for them has grown. Until now, the diversity of man and the reach of civilization have insured that the strengths and resources from the physical and psychological "hinterland," remaining intact despite disaster, would provide the materials and capabilities for civilization to restore itself and begin to grow again. The strengths found in this hinterland have reinforced civilization before, but now civilization is facing threats so great that none of its resources might be able to protect it.

Thus far, this assessment of technological threats to life has touched only upon the intrinsic and the involuntary; when humans take (or even threaten) action, damage must be included in the calculation, and the end of the species becomes a remote, yet terrifying possi-

bility. Conventional arms are achieving a sophistication, an efficiency of focused destructive power, and a graduation of lethality never before imagined. If employed for any length of time in their most destructive forms, it seems clear that modern weapons in inventory today are capable of destroying technological infrastructures on at least a regional or national scale while at the same time killing a large fraction of the people within the geographic zone involved. The worst campaigns of World War II demonstrated how high direct and collateral casualties can be and how vital the physical and psychological hinterland is to the organized survival of populations at war. It is not clear that such hinterlands would still exist in the event of a third world war limited to non-nuclear weaponry but with that weaponry deployed on a global battlefield and targeted for maximum effect. Assuming that all maritime nations would be combatants (whether by choice or not) and that the submarine would effectively bar *all* shipping in the great ocean basins, areas without food and fuel self-sufficiency would quickly collapse. Add to this even the most benign of nuclear scenarios—a “contained” thermonuclear exchange between great powers—and the added deaths (in the hundreds of millions). The added societal disruption (virtually all the major infrastructure nodal points of civilization wiped out) make any escalated modern warfare anathema to life.

The nuclear exchange, of course, is the most dramatic symbol of man's ability to eliminate life: it is not the only one, and may not even be the most likely to be employed. The powerful family of biological and chemical agents developed over the past several decades offers opportunities for purposeful (or, of course, accidental) mass destruction of life to even the least advanced societies. It is not hard to envisage a virulent, highly contagious pathogen released for limited political purposes ravaging a continent. (Just think of a smallpox epidemic in an era in which virtually nobody had been vaccinated.) The risk of disaster on a planetary scale can be seen on the horizon. Though a controversial issue, some scholars have made extreme predictions suggesting that following a massive thermonuclear exchange, enough dust would be lofted into the upper atmosphere to diminish the sunlight below that is required for mammalian or even plant life. This means that man can, by error or by choice, create remote global environmental conditions, which in the minds of some experts, could be more severe than those that may have killed the dinosaurs.

So we find mankind, at the flourishing height of civilization, profoundly endangered by the physical (or technological) and psycho-

logical structures upon which that civilization rests. Famine, plague, and war all wait in the wings, eager to play their parts. This discussion is not intended to suggest any sense of inevitability of the possible collapse of civilization, and it has not been from a neo-Malthusian or Club of Rome sense of despair in positive values of technology that the catalog of threats and vulnerabilities has been drafted. It is offered rather to provide both an agenda of worth and a sense of urgency.

Retreat into a future dominated by idealized images of a bucolic past will not serve modern mankind well at all. Much has been done to study and define such a revised, contratechnological direction to social evolution. Thus far, it seems that the models of ruralism and cellular isolation all fall down on the statistics of energy: the models, if universalized, simply do not provide enough consumable energy to meet current, much less projected, energy needs. It is not by rejecting technology but rather by managing its development and application that society can begin to act in its own defense against the threats it has created: the easiest problems to address are those requiring large and apparently "wasteful" investments in infrastructure redundancy and resiliency.

Today it makes economic sense to route *all* technological links over the easiest paths. This means that highways, canals, railways, pipelines, power lines, and telephone wires (together with the support and control systems for these) will inevitably come together at natural gates, passes, and crossroads. A first step is simply to remove this temptation to nature (and to man) by dispersed routing of critical networks. A second step is to provide inherent backup, or overload capacity, within the functional network to allow graceful deterioration of service under stress rather than system collapse. The major networks that need to be bolstered in terms of surge and rerouting include the regional electrical grids, gas and liquid pipelines, and such diverse potential chokepoints as deep water port facilities, computerized records, city water supplies, and unique pharmaceutical production plants. Even a minimum policy of maintaining a spare inventory of long lead time network components (e.g., large transformers and switches and certain pumps) can offset the vulnerability of life to catastrophic network failures.

Beyond the expensive but easily comprehended challenge of reinforcing and relaxing the critical technological life-support networks so that they can better absorb stress and extinguish failure lies a much greater challenge, that of designing the institutions of civilization to survive and, at the same time, flourish. This suggests purposeful activity at both the technical and psychological level to

create social units structured around self-sufficiency to afford quarantine and insulation from network failures but that still enjoy easy interaction with neighboring units and beyond. Such a model, which does not yet seem to have been developed, should encourage diversity without cultural isolation or estrangement. It should prove resilient to many classes of attack, in that each of its units provides first-order shock absorbency and each unaffected unit participates in the hinterland role. The models can appear to be, as in the network case, economically inefficient but societally enriching. In other words, beyond technology is the system of values that should govern its direction, its use, and its extent of dominance over life.

We must continue to look to tailored technologies for continued and improved support to future life. There appears to be at least one if not several "green revolutions" still to be achieved in agriculture alone. Energy options already exist that would eliminate the crisis content of current oil importation policies—again, it is a matter of investing in the future through research and development, with technological objectives tempered by the requirements of life rather than the dictates of economy.

Beyond these guideposts for a civilization at peace we must address that threat of war, particularly nuclear war or accident, which can arise with such speed as to overwhelm civilization and the life it supports. War is at best the result of miscalculation or of ignorance; at worst, it is a galvanic national contraction in the absence of any alternative. What can technology offer that can reduce the impact of error and offer alternatives to self-immolation?

The KAL 007 incident in September 1983, when a Korean civilian airliner was shot down by a Soviet fighter, is significant in this context, not because of its specifics but because of its generalities. The West does not need reminding of the Soviets' predilection for absolutist action in response to perceived threats to their national security. What *is* worth reminding ourselves of is that the Soviet response system is not rich in alternatives and has little capacity for graceful rebound from shock. The implications of this systemic rigidity, were an important and exfoliating crisis to develop, are sobering; the absence of consultative or interactive mechanisms for injection of political judgment into the security equation makes for the possibility—even the probability—of very stark futures indeed.

The emerging geopolitical environment must be examined carefully in order to understand the dangers and risks that lie ahead. The foci of power and real leverage now extend beyond the superpowers to encompass many nations. For better or worse, the superpowers can no longer set the rules of the game, can no longer claim

condominium rights to any piece of the world, and can no longer guarantee the outcome of events set in motion by themselves or by others.

The quest for scarce resources has introduced a new and qualitatively different format for relations between the industrialized and developing worlds. The reality of interdependence provides underdeveloped nations not only economic but also substantial political leverage. This process of differentiation between the resource-sufficient and the resource-needy has created internal as well as bloc instabilities. We should anticipate that frictions over resource distribution will intensify, making efforts at international cooperation more difficult.

The proliferation of new technologies—some benign, some lethal—adds a new dimension to the power paradigm. There appear to be few permanent barriers (and given the emerging political environment, a great many incentives) to the acquisition of sophisticated weapons or delivery systems. The effect of such weapons lends real leverage to the claims of radical national or subnational groups who might otherwise be regarded as “crazies” or criminals. Motivations and capabilities have become far more difficult to gauge at a time when the traditional international order (the bipolar structure) has become far less effective as a mechanism of restraint.

In short, the future holds out the prospect of a large number of small crises, any one of which might escalate out of control. Management of these crises need not be purely *ad hoc*—a great deal can be done in advance to discourage automatic, emotional, rigid or trigger-happy responses. Such crisis avoidance merits the highest rank on the world's agenda.

It is time to think beyond pure strategies of assured destruction or damage limitation to assure national survival. The end result of any strategy of deterrence will never be true peace but merely the absence of war through bilateral terror. There are no winners and losers in a thermonuclear exchange, and any belief that an exchange can be “zero sum” is singularly inappropriate in an age fraught with ultimate risks. No matter how brutal the Russians may seem, collaborative exercises in crisis simulation and new methods of consultation and communication may be the only means of preventing a single tragedy from snowballing into a cataclysmic series of events.

The arms control debate that echoes around the world today touches only a part of the problem, in that it focuses on relatively minor limitations on the means of destruction and not on the issues that could lead to their use. This is not to suggest that the problem of arms control is not important, which it is, especially given the esca-



lation potential after any single detonation. It does, however, suggest that arms control is not sufficient to afford any guarantee of future security.

Robust force structures that are relatively insensitive to cheating by the other side must be explored as well as the kinds of offense-defense mixtures that could buffer verification errors or limit damage from third-party attacks. Above all, it is necessary to look at new means of joint crisis avoidance and management techniques that focus on the identification of the critical decision points affecting the participants, on the basic military and political issues involved, on crisis avoidance means, on suppression of violence in the event of confrontation, and on societal recovery of equilibrium and direction after the crisis is past.

Were the "unthinkable" to occur—and there is every reason to be concerned that it might—we must have tested ways of saying "stop" to the parties involved. One possible option would be to link the national command authorities of the superpowers (perhaps ultimately including a number of other powers in the network) to explore the critical elements of each sides' decision-making processes before a crisis occurs. Reliance on the communications and consultative mechanisms at the political level clearly does not always work. Whatever substantive judgments Andropov and Reagan might have reached about the Korean jetliner became irrelevant in the face of a rigidly based Soviet military decision to act.

One institutional mechanism to begin discussions about crisis control techniques is the Standing Consultative Commission, a bipartisan permanent body of military and intelligence professionals that takes up alleged treaty infringements. It would be equally reasonable for such a body to consider joint efforts that result in mutual advantages rather than mutual stalemates. Ultimately, however, such an effort will require sophisticated analytic modeling and computational capabilities to deal with the technical aspects of the problem. The International Institute of Systems Analysis in Vienna, directed by both American and Soviet scientists, could be a potential meeting ground for future cooperative study.

The risks of sharing data in these kinds of joint simulations should not be ignored. In attempting to understand fully the dynamics of each other's decision-making process, the danger that the Soviets might be deceitful enough to hide their true command structure—and their intentions—cannot be dismissed. The root question, however, is whether the strategic gains from such exercises would outweigh the potential for tactical losses, and we will never know the answer if we never try. We must make the attempt, or run the risk

of blundering into situations that could make the Korean airliner tragedy appear minor by comparison.

What is clear is that traditional means of arms control have accomplished very little. What is equally clear is that present efforts at crisis control are wholly inadequate. One hot line by which the U.S. president and Soviet premier can confer makes little sense when mid-level military personnel can set a chain of events into motion from which neither Reagan nor Andropov may escape. Indeed, the problems have become too complex and too important to be left in the hands of either diplomats or defense planners alone. Nor should the technical capabilities of the scientific community be consigned to academic isolation—the creativity and rigor that the scientific community has so effectively applied in the natural sciences should be brought to bear constructively and realistically on this family of problems. Although this concept of true collaboration may appear naive in a world made cynical by a history of failure, we need the tonic of hope and idealism to make our odds of survival more than a long shot.

While it might have taken months to deliver a declaration of war a hundred years ago, it would have taken months to go to war and possibly longer to sue for peace, much less to mobilize the men and supplies needed to fight it. The technology was such that small military units were capable of inflicting relatively small damages. Today, small numbers of unsophisticated, angry people can travel the globe in the span of a day, can communicate with others almost instantaneously, can carry hi-tech weapons of disproportionately large lethality and, unless we are very careful, can drive the superpowers and the rest of the world into a conflagration from which humankind cannot escape. It is necessary now to prevent technology and technological advances from becoming the penultimate device from Pandora's fatal box.

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PRESIDENT'S FOREIGN INTELLIGENCE ADVISORY BOARD

Tentative Agenda

Wednesday, March 14

8:30 - 9:00 Chairman's Time  
9:15 - 11:00 DCI Update  
11:00 - 11:10 Break  
11:10 - 12:45 Discussions with Mr. James Nolan, Director of the Office  
of Foreign Missions  
1:00 - 2:00 Working Lunch/Task Force Reports  
2:00 - 4:30 CI Task Force Report

Thursday, March 15

8:30 - 8:45 Reading Time  
8:45 - 10:00 Task Force Reports  
10:00 - 11:00 Discussions with Secretary Shultz (numerous subjects)  
11:00 - 11:45 Executive Session  
11:45 - 1:00 Lunch - Executive Dining Room, OE0B  
1:00 - 2:00 Discussion with Dr. Robert Kupperman, Director of Science  
& Technology Programs, CSIS, on the subject of Terrorism  
2:00 - 3:00 Discussion with Judge Webster, Director, FBI, on the  
subject of Terrorism  
3:00 - 3:30 Executive Session

**SECRET**

Executive Registry
84 - 818

14 February 1984

NOTE FOR:

25X1

SA/DCI/IA

FROM: EA/ExDir

SUBJECT: March PFIAB Meeting

1. PFIAB has asked that the DCI/DDCI meet with the Board from 0915-1100 hours on 14 March.  probably told you that the DCI normally provides the Board with a worldwide intelligence briefing which is prepared by the NIC (Hal Ford) and that I provide a list of CIA activities involving the Board.

25X1

2. On occasion, the PFIAB asks the DCI to brief on specific subjects. The staff does not, as yet, have a list of topics for the DCI but it has invited Secretary Shultz to speak on the following topics:

- U.S. and Soviet parity in staffing their respective missions in the U.S. and the Soviet Union.

- Presence of Soviet nationals in the U.S. Embassy in Moscow and their possible replacement by U.S. nationals.

- The quality of U.S. Government political analysis on the USSR.

- Coordination of crisis situations with regard to terrorism.

- PFIAB concerns with regard to  CI.

25X1

3. As soon as the staff has topics for the DCI's discussion, I will pass them on to you.

25X1



25X1

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The Director of Central Intelligence  
Washington, D.C. 20505

National Intelligence Council

NIC-01651-84  
12 March 1984

MEMORANDUM FOR: Special Assistant to the DCI

FROM:

[Redacted]

25X1

National Intelligence Officer for Counterterrorism

SUBJECT:

FBI Director Webster and the PFIAB [Redacted]

25X1

1. As I advised you by telephone on 12 March, and as I had been advised by my IICT colleague at the FBI, Mr. Webster to date has not asked his FBI subordinates to prepare any formal statement or talking points in anticipation of his appearance before the PFIAB this week. My FBI colleague believes this may be so because Webster will appear before two different Congressional committees earlier this week and therefore will be so up to speed on terrorism and the FBI that he will not need specific preparations for the PFIAB. I will be advised if Webster later does ask for specific talking points for the PFIAB. [Redacted]

25X1

2. In the meanwhile, I attached the draft of an opening statement Webster will make before the Subcommittee on Security and Terrorism, Committee on the Judiciary of the Senate on 14 March. The first 2 1/2 pages of that statement suggest that Webster may intend to repeat later to the PFIAB. It unblushingly takes credit for FBI effectiveness against terrorism and terrorists in the US. Webster/FBI implied confidence in the FBI's preparations for the Los Angeles Olympics and other major public events of 1984 should be noted. [Redacted]

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Attachment:  
As Stated

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THE THREAT OF TECHNOLOGIES TO LIFE

Address

By

Robert H. Kupperman

Center for Strategic & International Studies

Presented At The  
International Symposium On The Coevolution Of Man & Biosphere  
Helsinki, Finland

September 7, 1983

## THE THREAT OF TECHNOLOGIES TO LIFE

From whatever viewpoint we choose to look at the history of humanity, we are struck by how enormously compressed and foreshadowed is that period to which we can, in good conscience, ascribe the character of civilization. We can find a fossil record for mankind that, perhaps arbitrarily, separates early man from animals on the basis of tool-making -- the first example of technology, or the use of artifacts to extend the dimensions of human life. That fossil record extends back for a quarter of a million years, but not until the past hundred centuries or so can we point to "civilization" as the organizational principle of mankind. Besides the technologies characterized by the ages of stone, bronze, iron (and now perhaps polymers), civilization entails writing, calendars, agriculture, settlements, and governments. For almost all of those 10,000 years, the threats to life have been inherently self-contained and self-extinguishing. The historic record is rife with evidence of natural cataclysms -- vulcanism, seismic convulsions, climatic excursions, epidemics are all commonplace occurrences in the short span of the history of civilization. Man-made disasters -- for example, wars and their aftermath -- are so common as to provide a natural framework around which political and social history has been taught for centuries.

- 2 -

But the historical record makes it clear that, until recently, neither man nor his civilization has been truly threatened in the sense of absolute survival. Pre-civilized man was mobile and thin-spread across a widely differing range of physical environments. As these environments altered, slowly or catastrophically, man adapted or died -- but on a very local level. Elsewhere, other men, the majority of the individuals of a minority species, always seemed to have flourished and slowly expanded, pressing relentlessly outward against the constraints of geography. With the advance of technology to hold the environment at bay came sedentary organized civilization, and with it came greater threats to life posed by the very survivalist elements that characterized that organization -- proximity of large numbers of individuals and social dependence on immobile long-term assets like farms and forests. But even with the increased vulnerability of this "investment" phase of civilization to drought and flood, blight and disease, erosion and exhaustion, war and conquest, the scale of threat remained within the scope of the culture. Even the worst of blows dealt to civilization then were dissipated by the distribution of cultural assets, by the existence of physical and psychological "hinterlands", and by the natural shock-absorber function of institutional

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diversity and independence. The list of threats to life made good is as long as written history itself -- the consumption of the cedar forests of Lebanon with the fall of Rome, the Black Death with the Spanish destruction of mesoamerican society, the Mongol conquest with the desertification of the North African coast. But all of these, important as they have been for the future that followed, and large as they must have loomed to observers, were nonetheless self-extinguishing flames in the tapestry of life. Even the great war of 1914 can be assessed in parallel historic terms: a disaster, horribly costly in life and lives, but still an incident that civilization was able to comprehend and that culture was competent to repair. The hinterland held -- diversities, distances, and differences, all in themselves systemic inefficiencies of civilization, provided the recuperative forces necessary to maintain continuity.

In the years since the Great War, technology has grown at an almost exponential rate, as has the human population that grows ever increasingly dependent upon it. Mankind has, in the ecological sense, expanded into every niche suitable for life -- and even into some not so suitable. It has been technology -- whether the wooden dibble of Africa or the permafrost engineering of Siberia -- that has allowed man and his civilization to expand so far.

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It has been other technologies that have permitted civilization to stay and prosper throughout its global range. These technologies are so pervasive as to be "transparent" to the casual observer; they have become so much part of civilization as to appear virtually invisible. The apparently natural extension of technology in the service of civilization has perhaps reached a point of no return; the interlocking infrastructure that has evolved is so taken for granted and at the same time so complex as to allow for no realistic alternative.

Think about some of these interlocking technologies, their etiologies and their implications. One can start virtually anywhere and find oneself breaking into a fragile dynamic cycle of production, transportation, and consumption. Take the simple questions raised by the appearance of a local bread for sale in a major urban American area: wheat grown in Alberta, milled in Chicago, baked in New Jersey, and consumed in New York. A century of agricultural research has bred the grain to resist cold and blight; the steel and automotive industries provide the tractors and trucks to plant, harvest, and ship; the chemical and medical industries provide the safe insecticides and preservatives and leavenings and flavorings necessary to an economical product; a massive road and rail system allows bulk transport; clean water and cheap electricity are a major element

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in production, storage, and delivery; and the end item, a one pound loaf of white bread, sells for 69 cents -- or 13 minutes of labor at the minimum wage. This level of guaranteed efficiency is not without its price; the "price" of that efficient, economical infrastructure is leanness, and the cost is vulnerability to disruption. The same holds true in all great conurbations: modern technological efficiency in the provision of food, water, energy, medicine, transport, and communication has been achieved in the direction of economic affordability without much attention to network and intranetwork fragility. It seems that, in developing technological tools to manage environment, materials, and energy to the ends of higher qualities of human life, human civilization has created an infrastructure whose very success -- and therefore importance to social survival -- makes it, ironically, one of society's greatest weaknesses. It is a truism to reflect that the more advanced a civilization becomes, the more complex and interdependent becomes its technological base. Industries and institutions competitively barter their way into efficient interdependence so that no single function can stand alone. That same efficiency dictates that technological infrastructures interlock, both by hazard and by choice; efficiency further leads to rigid interconnections to assure steady-state service reliability. Those rigidities,

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of course, also assure that failures or problems that begin at a modest scale can propagate along and across interlocking infrastructural networks with exponential effects. The greater society's dependence for survival on its technological infrastructure, the greater its vulnerability to a cascade collapse triggered naturally or artificially at a key node. Technology perhaps is allowing the maintenance of human life and civilization at an artificially high level; perhaps mankind is in danger of losing the hinterlands so necessary in the past to recover from disaster. With the life support system of society so entwined, it seems certain that the propagation speed and range of a major modern disaster will exceed the absorption capacity of the system. Even the most centrally managed of human societies cannot cope with fundamental system failures multiplying at a biological rate. The analogy of a stressed society to a stressed organism is valid; a critical point is reached, a cascade of organ-system failures ensues, and death comes quickly.

It has been evident for many years that psychological reserves of human society were being inexorably eroded by the tensions of modern life; it is now clear that the physical underpinnings of that life are at risk -- and of themselves place at risk the society they support.

If we seek to characterize the families of cascade failures to which our modern infrastructures are liable,

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the catalog becomes as complex as the technologies themselves; virtually every network can be attacked successfully at many points, unraveling the macrosystem at an exponential rate. It may be more useful to identify the next tier upward of the effects of technological vulnerability, to address the question of what are the most serious threats to life by technological interdependence and related psychological unpreparedness for disaster.

The easiest threat to recognize is one that has always been with humanity but only now looms as a simultaneous danger to all populations -- hunger. Technology has thus far only deferred the end condition of the Malthusian equation by the near-magic of agricultural productivity. Carefully designed "green revolution" crop types, aggressively pressed into cultivation in the large areas of the globe still only being marginally cropped, hold out the promise for far better nutritional food stocks in the future than today. Institutionalized management, rather than predatory exploitation, of both traditional and unconventional oceanic food supplies can add greatly to that stock. Very small changes in preservation and storage efficiencies can have large leverage effects on food availability. But the essence of the Malthusian dilemma is the biologic rate of human population growth, a rate made possible by the technological advances in biology, medicine, nutrition, sanitation --



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and food production. It should be noted that much of that production has been advanced at the expense of genetic diversity and robustness in the high yield crop plant material; this opens the threat of evolving blights and diseases running unchecked across hemispheric agricultural zones. Losses in these circumstances could be catastrophic. If the problem is "exponential", only a non-linear solution may fit, and no one can confidently predict such a long-term trend in food production, much less storage, processing, and distribution. And it must be underlined that the processes at work here are unidirectional; we cannot resolve the problem by proscribing a subset of technology or its applications in order to revert to a lower threshold of danger, by trying to rely on starvation as an answer to hunger. Even centrally managed societies cannot reverse human expectations and survive.

A second and increasingly recognized danger reinforced by the interconnection and interdependence of modern society is that of disease, especially at the level of the epidemic and pandemic. The science and technology of medicine -- the antibiotic revolution -- is slowly but certainly suppressing the need for (and perhaps even the body's ability to produce) the range of antibodies once the common heritage of civilized man. The loss of these natural defenses, coupled with the natural social drive to preserve and extend life at both

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ends of its spectrum, is leading to a swollen population inherently susceptible, inherently under-protected, and therefore inherently, and increasingly, at risk in the event of a rupture in our thin biochemical armor. Add to this problem of reduced immunity to the next tier -- that of evolving disease organisms that have become sophisticated in defeating the once effective armamentarium of standard antibiotics. The evolutionary rate of microbes threatens to exceed the rate of medical control development; resistant strains of diseases are now endemic in hospitals and clinics around the world. The third tier, added to weakening populations subjected to a growing variety of pathogens is the loss of natural quarantines. Today, it is possible to reach any corner of the globe virtually any day; the exigencies of commerce and politics require that most of the world's population be in physical communication at all times. The airplane is the most visible and rapid of such links, but it is the daily global interchange of organic materials -- from food to cosmetics, from paper to paint -- that assures eventually a certain homogeneity of human risk. Man himself, and the mobility of his civilization, are the modern epidemiological vectors of greatest importance. On this already stark picture of mankind at self-imposed risk, we must draw two more specters: One, the explosive appearance of new, treatment-resistant diseases from whatever sources, suggested by some of the serious waste product problems just now being

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uncovered in industrialized countries and by the still-mysterious "immunity deficiency syndrome." Too, the history of human experimentation at the frontiers of the unknown is such as to almost guarantee contaminant releases into the natural environment, no matter what precautions are taken. What this habit of conditioned carelessness means in an era of biological research and genetic engineering cannot be predicted, only feared. That law of human behaviour which suggests that things do go wrong -- and in the least convenient way -- has uncomfortable implications for life in the face of modern biology in the hands of the uncaring.

Thus far, this assessment of technological threats to life has touched only upon the intrinsic and the involuntary; when humans will to do or even threaten to do, damage is included in the calculation, the end of the species becomes a remote, yet horrific possibility. Conventional arms are achieving a sophistication, an efficiency of focused destructive power and graduation of lethality, never before imagined. If employed for any length of time in their most destructive modalities, it seems clear that modern weapons in inventory today are competent to destroy technological infrastructures on at least a regional (national) scale while at the same time killing a large fraction of the people within the geographic zone involved. The worst

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campaigns of the Second World War demonstrated both how high direct and collateral casualties can be and how vital the physical and psychological hinterland is to the organized survival of populations at war. It is not clear that such hinterlands would still exist in the event of a third World War constrained to non-nuclear weaponry but with that weaponry deployed on a global battlefield and targeted for maximum effect. One example suffices, were we to predict that all maritime nations would be combatants (whether by choice or not) and that the submarine would effectively bar all shipping in the great ocean basins, areas without food and fuel self-sufficiency would collapse, and quickly. Add to this even the most benign of nuclear scenarios -- a "contained" thermonuclear exchange between great powers -- and the added deaths (in the hundreds of millions) and the added societal disruption (virtually all the major infrastructure nodal points of civilization wiped out) make any escalated modern warfare an anathema to life. The nuclear exchange, of course, is the most dramatic symbol of man's ability to eliminate life: it is not the only one, and may not even be the most likely to be employed. The enormously powerful family of modern biological and chemical agents developed over the past several decades now offers opportunities for purposeful (or, of course, accidental) mass destruction of

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life to even the least advanced societies. It is not hard to envisage a robust, highly contagious pathogen released for limited political purposes ravaging a continent. (Just think of a smallpox epidemic in an era in which virtually nobody has been vaccinated.) And we can see on the horizon the now measurable risk of disaster on a planetary scale. Though a controversial issue, some scholars have made extreme predictions suggesting that following a massive thermonuclear exchange, enough dust would be lofted into the upper atmosphere sufficient to diminish the incidence of sunlight below that required for mammalian or even plant life. This means that man can by error, or by choice, create remote global environmental conditions, which in the minds of some experts, could be more severe than those that may have killed off the dinosaurs.

So we find mankind, at the flourishing height of civilization, profoundly endangered by the physical (or technological) and psychological structures upon which that civilization rests. Famine, plague, and war all wait in the wings of the history of humanity, eager to play their parts. It has not been the thrust of this discussion to suggest any sense of inevitability of the possible collapse of civilization; it has not been from a neo-Malthusian or Club of Rome sense of despair in positive values of technology that the catalog of threats and vulnerabilities has been drafted. It is offered rather to provide both an agenda of worth and a sense of

urgency to its address.

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At the outset, it should be made clear that retreat into a future dominated by idealized images of a bucolic past will not serve modern mankind well at all. A great deal has been done, in Europe and America, to study and define such a revised, contratechnological direction to social evolution. Thus far, it seems that the models of ruralism and cellular isolation all fall down on the statistics of energy: the models, if universalized, simply do not provide enough consumable energy to meet current, much less projected, energy needs. It is not by rejecting technology but rather by managing its development and application that society can begin to act in its own defense against the threats it has already created. To a first order, the easiest problems to address are those requiring large and apparently "wasteful" investments in infrastructure redundance and resiliency.

Today it makes economic sense to route all technological links over the easiest paths. This means that highways, canals, railways, pipelines, power lines, and telephone wires (together with the support and control systems for these) will inevitably come together at natural gates, passes, and crossroads. A first step is simply to remove this temptation to nature (and to man) by dispersed routing of critical networks. A second step is to provide inherent backup, or overload capacity, within the functional network to allow graceful deterioration of service under stress rather

- 14 -

than system fracture. A trivial example suffices: to reduce costs, the eight-lane automobile beltway encircling Washington DC was built without parallel service roads or turnoffs; two months ago, a single truck accident at 3:00 in the afternoon closed all lanes in both directions, and some 50,000 vehicles were immobilized for up to 4 hours. The major networks that need to be bolstered in terms of surge and rerouting include the regional electrical grids and the gas and liquid pipelines. In this category also fall such diverse potential chokepoints as deep water port facilities, computerized records, city water supplies, and unique pharmaceutical production plants. Even a minimum policy of maintaining a spare inventory of long-lead time network components (e.g., large transformers and switches and certain pumps) can ameliorate the vulnerability of life to catastrophic network failures. Note that, two weeks ago, a single guerrilla attack on power lines in El Salvador paralyzed the western half of that beleaguered -- and not highly industrialized -- nation.

Beyond the expensive but easily comprehended challenge of reinforcing and relaxing the critical technological life-support networks so that they can better absorb stress and extinguish failure lies a much greater challenge -- designing the institutions of civilization to survive and, at the same time, flourish. This suggests purposeful activity at both the technical and psychological level to create social

- 15 -

units structured around self-sufficiency to afford quarantine and insulation from network failures but that still enjoy easy interaction with neighboring units and beyond. Such a model, which does not yet seem to have been developed, should encourage the richness of diversity without cultural isolation or estrangement. It should prove resilient to many classes of attack, in that each unit of itself provides first-order shock absorbency and each unaffected unit participates in the hinterland role. The models can be seen to be, as in the network case, economically inefficient but societally enriching. In other words, beyond technology is the system of values that should govern its direction, its use, and its extent of dominance over life.

We must continue to look to tailored technologies for continued and improved support to future life. There appears to be at least one if not several "green revolutions" still to be achieved in agriculture alone. Energy options already exist that would eliminate the crises content of current oil importation policies -- again, it is a matter of investing in the future through current research and development, but with a set of technological objectives tempered by the requirements of life rather than the dictates of economy. Beyond these guideposts for a civilization at peace we must address the threat of war, particularly nuclear war or accident. That can arise with such speed as to overwhelm civilization and the life it supports. War at best is the result of miscalculation, of ignorance; at

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worst, it is a galvanic national contraction in the absence of any alternative. What can technology offer that can reduce the impact of error, that can offer alternatives to self-immolation?

The KAL 007 incident is significant in this context, not because of its specifics but because of its generalities. The West does not need reminding of the Soviets' predilection for absolutist action in response to perceived threats to their national security. What is worth reminding ourselves of is that the Soviet response system is not rich in alternatives and has little capacity for graceful rebound from shock. The implications of this systemic rigidity if an important and exfoliating crisis were to develop are rather sobering; the absence of consultative or interactive mechanisms for injection of political judgement into the security equation makes for the possibility -- even the probability -- of very stark futures indeed.

We must be prepared to examine carefully the emerging geopolitical environment in order to understand the dangers and risks that lie ahead. The foci of power and real leverage now extend beyond the superpowers and a few select powers to encompass many nations. For better or worse, the superpowers can no longer set the rules of the game, can no longer claim condominium rights to any piece of the world and can no longer guarantee, with any certainty, the outcome of a chain of events set in motion by themselves or by others.

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The quest for scarce resources has introduced a new and qualitatively different format for relations between the industrialized and developing worlds. The reality of interdependence provides underdeveloped nations not only economic but substantial political leverage. And this process of differentiation between the resource-sufficient and -needy has created internal as well as bloc instabilities. We should anticipate that frictions over resource distribution will only intensify, making efforts at international cooperation that much more difficult.

Too, the proliferation of new technologies -- some benign, some lethal -- adds a new dimension to the power paradigm. There appear to be few permanent barriers (and given the emerging political environment, a great many incentives) to the acquisition of sophisticated weapons or delivery systems. The effect of such weapons lends real leverage to the claims of radical national or subnational groups who might otherwise be regarded as "crazies" or criminals. Motivations and capabilities have become far more difficult to gauge at a time when the traditional international order (the bi-polar structure) has become far less effective as a mechanism of restraint.

In short, the future holds out the prospect of a large number of little crises, any one of which might escalate out of control. Management of these crises need not be purely

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ad hoc -- a great deal can be done in advance to discourage knee-jerk, emotional, and rigid or trigger-happy responses. Such crisis avoidance merits the highest rank on the world's agenda.

It is time to think beyond pure strategies of assured destruction or damage limitation to assure our national survival. The end result of any strategy of deterrence will never be true peace but merely the absence of war through bilateral terror. There are no winners and losers in a thermo-nuclear exchange; any belief that an exchange can be "zero-sum" is singularly inappropriate in an age fraught with ultimate risks. No matter how brutal the Russians may seem, collaborative exercises in crisis simulation, new methods of consultation and communication may be the only means of preventing a single tragedy from snowballing into a cataclysmic series of events.

The arms control debate that echoes around the world today touches only a small part of the problem, in that it focuses on relatively minor limitations on the means of destruction and not on the issues that could lead to their tragic use. This is not to suggest that the problem of arms control is not important; it is, especially given the escalation potential after any single detonation. It does, however, suggest that arms control is not sufficient to afford any guarantee of future security.

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We do need to explore robust force structures that are relatively insensitive to cheating by the other side. We do need to explore the kinds of offense-defense mixtures that could buffer verification errors or limit damage from nth country attacks. Above all, however, we must begin to look at new means of joint crisis avoidance and management techniques that focus on the identification of the critical decision points affecting the participants, on the basic military and political issues involved, on crisis avoidance means, on suppression of violence in the event of confrontation, and on societal recovery of equilibrium and direction after the crisis is past.

Were the "unthinkable" to occur -- and there is every reason to be concerned that it might -- we must have tested ways of saying "stop" to the parties involved. One possible crisis management option would be to link the national command authorities of the superpowers (perhaps ultimately including a number of other powers in the network) to explore the critical nodes of each sides' decision-making processes before a crisis occurs. Reliance on the communications and consultative mechanisms at the political level clearly does not always work. Whatever substantive judgements Messrs. Andropov and Reagan might have reached about the Korean jetliner became irrelevant in the face of a rigidly based Soviet military decision to act.

One institutional mechanism to begin discussions about crisis control techniques is the Standing Consultative Commission, a permanent body of military and intelligence professionals

-20-

from both sides which takes up alleged treaty infringements. Would it not be equally reasonable for such a body to consider the kinds of joint efforts that result in mutual advantages rather than mutual stalemates. Ultimately, however, such an effort will require sophisticated analytic modeling and computational capabilities to deal with the technical aspects of the problem. The International Institute of Systems Analysis in Vienna, directed by both American and Soviet scientists, could be a potential meeting ground for future cooperative study.

The risks of data sharing in these kinds of joint simulations should not be ignored. In attempting to fully understand the dynamics of each other's decision-making process, the danger that the Soviets might be deceitful enough to hide their true command structure -- and their intentions -- cannot be dismissed. The root question, however, is whether the strategic gains from such exercises would well outweigh the potential for tactical losses -- and we will never know the answer if we never try. We must make the attempt for we most certainly will run the risk of blundering into situations which may make the Korean airliner tragedy appear minor by comparison.

What is perfectly clear is that traditional means of arms control have accomplished very little. What is equally clear is that present efforts at crisis control are wholly inadequate. One hot line by which the U.S. president and Soviet premier can confer makes little sense when mid-level military personnel

-21-

can set a chain of events into motion from which neither Reagan nor Andropov may escape. Indeed, the problems have become too complex and too important to be left in the hands of either the diplomats or the defense planners alone. Nor should the technical capabilities of the scientific community be consigned to academic isolation; the creativity and rigor that the scientific community has so effectively applied in the natural sciences should be brought to bear constructively and realistically on this family of problems. Although this concept of true collaboration may appear naive in a world made cynical by a history of failure, we need the tonic of hope and idealism to make our odds of survival more than a long shot.

A hundred years ago, it took months to deliver a declaration of war much less to mobilize the men and supplies needed to fight it. The technology was such that small military units were capable of inflicting relatively small damages. Today, small numbers of unsophisticated, angry people can travel the globe in the span of a day, can communicate with others almost instantaneously, can carry hi-tech weapons of disproportionately large lethality and, unless we are very careful, can drive the superpowers and the rest of the world into a conflagration from which humankind can not escape.

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News Bulletin : THE WASHINGTON POST, Pg. C-11

27 February 1984  
Item No. 1**JACK ANDERSON****CIA No Longer  
Well Informed  
About Kremlin**

The press has reported, quite correctly, that U.S. intelligence was caught asleep at the switch by the death of Kremlin leader Yuri V. Andropov and his replacement by Konstantin U. Chernenko.

An insider admitted to me that the CIA wasn't sure whether Andropov was dead or alive during his last days. The first signs of his passing were noticed by The Washington Post's Moscow correspondent, Dusko Doder. The Post alerted U.S. government officials several hours before the first intelligence sightings reached Washington.

After Chernenko had already been anointed, the CIA's Kremlinologists were still predicting that Mikhail Gorbachev would be the new Soviet leader. Not until Chernenko appeared as head of the funeral commission did the CIA conclude that he had emerged as chief comrade. He had been a low fourth on its list of likely prospects.

How could America's multibillion-dollar intelligence apparatus be scooped by a lone journalist? Does this mean our intelligence system can't be relied upon to monitor the

decisions and actions of the Soviet leadership?

In search of the answers, I examined more than 50 classified documents, ranging from "Confidential" to "Top Secret Umbra." I also consulted top CIA officials, both past and present.

They concede that the CIA has no direct pipelines into the Politburo and few informants behind the grim, fortress-like walls of the Kremlin. They blame this on former president Jimmy Carter, who virtually wiped out the CIA's human-intelligence network within the Soviet Union.

One insider, trying to explain Carter's action, suggested that he probably believed "high-tech intelligence had made old-fashioned intelligence obsolete." Another source just shrugged and said: "I think Carter felt this kind of espionage was immoral."

Yet despite its blind spots, the United States has the best technological intelligence in the world. U.S. agencies can intercept messages, break codes, monitor conversations and photograph just about everything that appears on the Soviet surface. Some photographs are detailed enough to identify a bolt in a Soviet tank.

Because the old men of the Kremlin have been in power for decades, the CIA has also had time to investigate their backgrounds and analyze their behavior thoroughly. The CIA

computers can summon up detailed information about any Soviet leader. The agency has been able to diagnose their health, for example, with uncanny accuracy.

Last July—long before the world had any inkling that Andropov was seriously ill—I was able to write: "Andropov's days are numbered, and he knows it. My CIA sources are betting that he will die within a year. That's how bad his health is. . . . Andropov's tenure as top man in the Kremlin could be the shortest in Soviet history."

Classified CIA reports, which described Andropov down to the missing part of his right eyebrow, warned that he would be "a formidable adversary," skilled in political intrigue, perfectly willing to use violence and terror, dedicated to Marxist dogma, "ruthless," and "cunning."

In contrast, top-secret reports describe Chernenko as a master bureaucrat, skilled at "handling paper work." Unlike Andropov, who sought to put his own stamp on the Politburo, Chernenko is expected to function more as "chairman of the board." In the words of the CIA, he'll be "responsible for seeing to it that Politburo decisions are carried out—that is, as the top civil servant of the Politburo, not as its master."

Given his advanced age and frail health (he's 72 and is reported to have emphysema), Chernenko will be another interim leader.



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**CONFIDENTIAL**

16 February 1984

## MEMORANDUM FOR THE RECORD

SUBJECT: Chronology Preceding Andropov Death Notice

1. Follows a chronology of Wire reporting and communications on the night of 9-10 February 1984 preceding the Soviet announcement of the death of Yuriy Andropov:

EST

- 1215 An advisory from London Bureau reported that BBC had learned that Andropov's son had returned home for family reasons. BBC and LD were said to be alert and watching Soviet media.
- 1815 Advisory from LD/BBC reported that as of 1800 EST Moscow radio and television were following their regular schedules.
- 1815 Wire received calls in succession from INR, State Ops and OCPAS citing reports that Moscow radio or television was broadcasting somber music. The Wire editor advised callers of the LD/BBC media advisory on Soviet media behavior.
- 1830 Wire editor called London Bureau on the telephone (communications were temporarily down) to report consumers' notification of alleged changes in Soviet media behavior. London editor, after checking with BBC, advised that Soviet media behavior appeared to be normal. A followup message to London and to Okinawa, which also monitors Soviet broadcasts, asked for media updates.
- 2005 Advisory from Okinawa reported normal Soviet media behavior.
- 2105 Advisory from LD/BBC reported that television had followed normal programming until its signoff at 2020 EST but did not carry its normal program preview. No unusual behavior was noted on the major radios; the Mayak music station was noted to be broadcasting classical music following a scheduled newscast.
- 2110 OCPAS senior watch officer called, having seen a copy of the Okinawa advisory received via another circuit, and asked to receive media advisories unedited. The Wire complied and filed all subsequent advisories to OCPAS.

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SUBJECT: Chronology Preceding Andropov Death Notice (2)

- 2230 Wire received a call from London editor, who advised that BBC had staffed up for the night to maintain a watch on Soviet media.
- 2230 Senior Ops Officer called asking for analysis of media behavior reports. The Wire contacted an AG analyst, who subsequently arrived at Headquarters and maintained contact with OCPAS as well calling London and Okinawa bureaus. (Analyst's chronology is attached.)
- 2300 Advisory from LD/BBC reported that major Soviet radios were following normal schedules, but with somber classical music being played between programs. The Mayak music station was reported to have been carrying classical music since 2000 EST except for scheduled newscasts.
- 0100 LD/BBC advisory reported that Moscow TV had signed on and was carrying documentaries. The 0000 EST newscast was reported to have carried an earlier broadcast leadership speech containing references to Andropov. Major Soviet radios were reported to be carrying normal programs interspersed with classical music. The Mayak station continued to play classical music.
- 0240 A LD/BBC advisory reported that all Moscow domestic service radios linked up as usual to broadcast the scheduled 0200 EST newscast, which contained an item on foreign reaction to Andropov's PRAVDA interview. Following the newscast, the stations returned to independent scheduled programming.
- 0540 A LD/BBC wrapup of media observations over the previous hours noted that Mayak at 1905 and 2305 EST had preempted scheduled comedy programs to broadcast classical music. Other domestic services had been carrying scheduled programming. The Moscow international English-language service was reported to have preempted a scheduled voice program at 0430 EST to carry solemn music, which was followed by a scheduled newscast at 0500 EST.

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SUBJECT: Chronology Preceding Andropov Death Notice (3)

0550 Okinawa advisory at this time as well as at 0400 EST noted no unusual Soviet media behavior.

0620 LD/BBC advisory reported that all Moscow domestic radios had linked up and were broadcasting classical music.

0626 TASS announced Andropov's death.

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Chief, Wire Services Staff

(Distribution: D/FBIS, C/OPS, C/DRD, C/AG)

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10 February 1984

MEMORANDUM

## Andropov's Legacy and the Future

President Yuriy Andropov's death at age 69, only 15 months after he became party General Secretary and only six months after he became head of state, finds the regime largely unprepared for a new succession. Although Andropov had accumulated more personal power than any of his predecessors in a comparable period, his tenure was so brief, and his absences from the job so lengthy, that his regime will be known more for what it set in motion than for what it accomplished. The succession choice is not as clear-cut as it was after Brezhnev. Whoever is chosen, Andropov has left him the same unresolved economic, social, military, and foreign problems that confronted him.

\* \* \* \* \*

The remaining leaders in the Politburo will move quickly to select a new General Secretary--their choice will be ratified by a plenary meeting of the party Central Committee within a few days. This will be a tough decision to make. All the viable candidates for the top party post have significant liabilities. The issue seems to be whether to opt now for a younger, perhaps more vigorous and longer lasting leadership or to choose a senior leader who will function as a transitional figure, thus once again avoiding a more profound change at the top.

A Tenure Too Short

Continuity was the main theme of both domestic and foreign policies during Andropov's brief tenure. Andropov's own cautious approach in pressing for major changes, the entrenched political opposition, bureaucratic resistance to important policy shifts, and his flagging health made it impossible for him to have a significant impact on Soviet politics or policy.

On domestic issues Andropov focused his attention on the need to rejuvenate the elite and revitalize the Soviet economy, attempting to "get the country moving again," after the lethargy of Brezhnev's last year. Andropov chose administrative measures (the discipline and anticorruption campaigns) to set the tone for his regime and to attain at least a short-

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term gain in productivity. He also strongly endorsed party Secretary Mikhail Gorbachev's attempt to refocus Brezhnev's food program on incentives rather than on organizational measures. Andropov's approach, however, was to try to make the system function better rather than to change it fundamentally. His insistence that order and discipline were the prime prerequisites--and his ability to follow through with tough personnel actions--suggests that this approach was agreed to by a core of Politburo members and might continue despite his removal from the scene.

In the foreign policy arena Andropov made no significant departures from Brezhnev's policies. He focused his personal attention on arms control measures and even after the beginning of his lengthy illness assumed a major role in putting forth new Soviet proposals. He took the propaganda offensive in response to NATO's INF deployments. Despite Andropov's foreign policy experience, however, the Soviet Union's international position did not improve during his tenure. In some respects--for example, in relations with West European countries--he bequeaths to his successors a more troubling set of problems than he inherited.

### The Succession Process

The decision on a new General Secretary will be made in the Politburo in the next day or so by the senior core of remaining leaders. While a coalition may have already formed "in the corridor," all remaining full Politburo members will vote at a formal Politburo meeting on the succession question. The Central Committee will then quickly meet to rubber stamp their choice. Only in the unlikely event that the Politburo was unable to reach a consensus would the issue be placed before the more than 300 voting members of the Central Committee for resolution.

Less political urgency attaches to filling Andropov's largely ceremonial Supreme Soviet post. After Brezhnev's death the post remained vacant for eight months. While there is no formal requirement to give this post to the new party leader, the precedents established by Brezhnev and Andropov suggest that the Politburo is now inclined to do so.

More importantly, it seems likely that the post of Defense Council Chairman will also be held by the new party leader. Indeed, while these posts are formally separate, the jobs apparently are intended to go together. Both Brezhnev and Andropov evidently acquired this function when they became General Secretary, although formal announcement was not made in Brezhnev's case for 12 years and Andropov's for six months afterward.

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Key Indicators

An announcement of the plans for Andropov's funeral is expected immediately. Those arrangements and the funeral itself will provide important clues to the identity of the heir apparent and the relative standing of the other leaders. The heir apparent will likely be listed as chairman of Andropov's funeral commission and will probably deliver the eulogy. When Brezhnev died, the announcement that Andropov headed the funeral commission anticipated by a day the latter's formal approval as General Secretary. Should the succession remain unresolved by the time of the funeral which will take place within several days, the funeral commission chairman might remain unannounced, the protocol rankings at the event could be ambiguous, and the leader selected to give Andropov's eulogy might not be his replacement. Such disarray would suggest deadlock.

Best Placed Candidates

Precedent suggests that Andropov's successor will come from the party secretaries who hold voting membership in the Politburo--criteria met now only by Mikhail Gorbachev, Grigoriy Romanov, and Konstantin Chernenko. Given the experience of Brezhnev's last years and Andropov's short tenure, the Politburo will have a logical reason to avoid selecting an older and frail leader again to serve as party boss. Such a choice would have a negative impact on how the system is viewed at home and abroad. Viewed from this standpoint alone, the relatively junior Mikhail Gorbachev and Grigoriy Romanov would be the most likely candidates to attain the top party job.

Andropov apparently was preparing Gorbachev to be his successor. [redacted]

[redacted] Gorbachev evidently was placed in charge of personnel appointments about six months after Andropov took over from Brezhnev, and he reportedly chaired Secretariat meetings in the absence of Andropov.

The Politburo's senior members, however--Ustinov (75), Gromyko (74), Chernenko (72), and Tikhonov (78)--might find Gorbachev too young at 52 to serve as leader over themselves. Moreover, with his background in agricultural management he might not have the support of the important heavy industry, defense-industrial, and military constituencies.

Romanov, at 60, has had little visibility since becoming a party secretary but he is probably perceived by the Politburo as more acceptable to those same constituencies. For example, he has had experience for more than a decade as a manager of a key regional party organization with strong ties to the industrial and military sector. Moreover, Romanov is an

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ideological conservative who has taken a harder line than many of his colleagues on foreign policy issues. In a time of troubles for the USSR at home and abroad, the Soviet leaders may now look to the more conservative candidate as the better choice. Romanov, however, has served only a short time as a national party secretary (since June 1983) and has a reputation for crudeness and unbridled ambition that may hurt his cause.

Chernenko, now 72, has significant liabilities, including ill health. He was passed over last time reportedly because he was actively opposed by such key leaders as Ustinov and Gromyko, both of whom continue to be important players in the Politburo.

The strongest signal that Chernenko nevertheless remains an important factor in the leadership is the highlighting of his position as unofficial party second-in command at the November 1983 anniversary ceremonies and in the December-January honorary nominations to the Supreme Soviet. If his health were to improve--he seems to have emphysema--Chernenko could be the choice of those in the Politburo who are reluctant or unable to choose among the other, more junior candidates for the job. He could also benefit from rivalries among some of the younger contenders, who might prefer his selection rather than see the position go to a strong rival.

#### Enter the Kingmaker

The lack of ideal candidates in the Secretariat could lead the Politburo to turn to leaders outside it, such as Dmitriy Ustinov, even though such a course would be unprecedented, and despite his age and reported poor health.

Ustinov has the advantages of past experience in the Secretariat (1965-1976) and service in the important military sector. If he and the rest of the Politburo wanted to send a signal that things are under control while recognizing that only an interim choice has been made, they could pick Ustinov. Ustinov might have sufficient personal prestige and Politburo supporters to take the job regardless of the signal it sends. Of course, given his age, such a choice would lead almost inevitably to a more protracted and potentially more controversial succession.

#### A Dark Horse

Viktor Grishin, whom Soviet officials had mentioned as a possible "compromise candidate" when Brezhnev was being replaced, could again become one. Located in Moscow, he has a definite political advantage over his regionally based colleagues. He too is handicapped by health problems, however, and he is not part of the Andropov coalition.

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### Emphasis on Collectivity

Regardless of who is selected to succeed Andropov as party boss, the presence of strong political rivals from the outset--something that Andropov did not have to face--will probably lead to considerable maneuvering in the Politburo, and the new General Secretary's position could be more vulnerable. The age structure of the Politburo might allow a younger candidate to consolidate power sooner, as older members die off, but rivalry among younger leaders would probably be intense.

Nevertheless, the progress Andropov made in consolidating his team at the December plenum could work to the benefit of the new General Secretary. Andropov's closest supporters--Ustinov, Gorbachev, and probably Gromyko--were augmented by the promotions of Solomentsev to the Politburo, Vorotnikov to the Secretariat, and KGB Chief Chebrikov to candidate politburo status. If this group should be able to work together and agree on basic programs, it could give the new leader a core of support.

### Prospects for Policy Change

Although the Soviet economy rebounded in 1983 (with GNP growth estimated between 3.5 to 4 percent), the majority of factors constraining economic growth since the late 1970s--declining increments to the labor force, slowing growth of capital stock, raw material shortages, and transportation bottlenecks--will not go away in this decade. Despite the need to take new approaches to deal with these issues, the very complexity of the problems will make it difficult for the post-Andropov leadership to unite on a new approach. Moreover, any significant reorientation of economic priorities would involve painful and politically risky trade-offs between investment, military spending, and consumption.

Because the existing consensus on foreign policy is stronger than that on domestic issues, major changes are even less likely in that area. Besides, Foreign Minister Gromyko clearly played a major foreign policy role under Andropov and his influence in this area is likely to continue. The commitment to sustain the global dimensions of Soviet policy will endure. The new leadership, however, may well wish to renew an arms control dialogue with the US. The price the regime is willing to pay for this will depend on the priorities the new leadership establishes and the degree of unity it can maintain in pursuing its goal.

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SOVIET LEADERSHIP POLITICS AND TRANSITION

For several years beginning with the period before Leonid Brezhnev's death in 1982, Soviet leadership politics has been increasingly important to the Intelligence Community, especially those agencies with substantial charters in political intelligence, i.e., CIA and State/INR. Overall our record has been a strong one. But we face a number of problems, some of which may not be soluable.

The death of Yuri Andropov and the accession of Konstantin Chernenko, himself probably a transitional figure by virtue of his age and questionable power base, mark a continuing process of leadership transition in the Kremlin and the Soviet power apparatus as a whole. We are observing a transition of generations at many levels of the system, not just a transition of top-level individuals. Especially when the Soviet system faces serious internal and external challenges, which call into question the viability of previous policies, and could conceivably someday threaten the stability of the system itself, the shiftings of leadership personalities, of policy positions among them, and of leadership generations are of keen interest to US policy.

CIA analysts were able nine months before Brezhnev's death to recognize Yuri Andropov as the definite front runner to replace him. This was done on

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the basis of evidence about moves to ready him for the top job, e.g., his leaving the KGB to become a secretary of the Central Committee in the spring of 1982, and about the assembly of a powerful coalition of senior Politburo members with significant institutional constituencies to support him.

We were also able to track the development of the policy positions being advanced by Andropov and his Politburo allies, such as heightened discipline and modest management reform, as well as some of the opposition to these policies. The latter were rooted in the anxieties of the party apparatus, which is Chernenko's main constituency. As 1983 wore on we observed the outward signs of Andropov's deteriorating physical condition. Then in August-September, as you know, he disappeared from view.

From Fall 1983 until Chernenko's accession to the General Secretaryship in February 1984, I would say our performance was somewhat less impressive than earlier, at least in hindsight. We do not know for certain when Andropov's health deteriorated to the point that his colleagues on the Politburo no longer could expect him to return to office actively. But the Soviets now report that he was on dialysis from February 1983 on. We may have been too inattentive to signs of effective challenge to Andropov's authority during 1983 and a bit too ready to believe the testimony of many Soviet authorities who were telling the world privately, but no doubt on instruction, that he was firmly in control and would return.

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The fact that US intelligence agencies were scooped by newsmen in detecting the death of Andropov at the very end is itself a rather trivial matter. The more worrisome failing was that we fell out of touch, at some point which we cannot clearly pinpoint at this time, with Andropov's declining physical and, presumably, political condition.



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To compound our problem, the very taciturn and controlled style of public political communication developed during the long and placid Brezhnev period, contrasting with more the lively style of Khrushchev's period, reduced the flow of raw materials on Soviet politics in the Soviet media.

What must we do in the future?

- First, we must improve our analytical skills and data management so as to wring the most political intelligence out of public Soviet communications. This will be difficult, but the quality of our analysts is improving all the time and we are inclined to expect Soviet media to be more revealing to the trained eye in the future. Our needs here are mainly trained analysts and time to give them experience.

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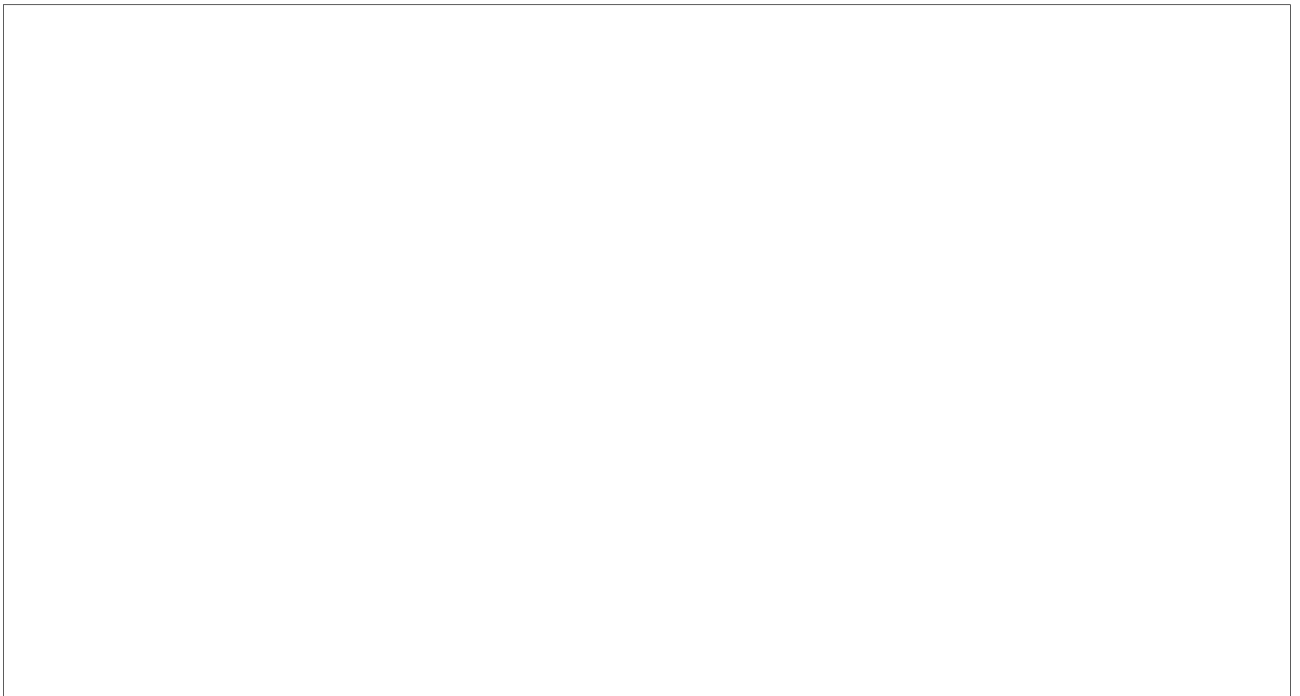
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-- Second, we have to hone our analytic methods and procedures to be open to alternative views and hypothesis at all stages, and to guard against mind-sets which screen out certain kinds of evidence. This is really a matter of intellectual discipline and management.

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