NATIONAL SECURITY AGENCY

CRYPTOLOG
The Journal of Technical Health

CRYPTOLOG

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A Note From The Publisher:

(U) _Who's on first?_ If you have noticed that the Winter 1996 issue (Vol. XXXIII No. 4) followed the Summer issue (Vol. XXII No. 2), be assured that you have not missed the Fall issue (Vol. XXII No. 3). The demands of producing a separate, unclassified version of the Spring issue (Vol. XXII No. 1) dedicated to the memory of Dr. Tordella) in time for the opening of NSA's new supercomputer facility made it necessary to declare the unclassified version the fall issue. 1997 should see us back on schedule.

(U) _What's on second?_ The Summer 1996 issue of CRYPTOLOG was inadvertently sent to an incorrect distribution. Please contact the editor at cryptolog@pmssa or on 963-3123 if you did not receive yours; extra copies are still available.

Perspective:

A Wealth of Experience (U)

An Interview with Admiral William O. Studeman, USN, ret. (U) former DDCI and former DIRNSA (U)

by Bill Nolte

(U) **Let's begin with some background. Did you intend to have a career in intelligence when you joined the Navy?**

(U) No, not really. I was commissioned through Officers Candidate School, which is principally a pipeline for surface officers. At OCS, I wanted to go into aviation. My family has had a long history in aviation, my father being an aviation pioneer. So, I went through pre-flight and flight school at Pensacola. I wore glasses at the time, but the Navy had a program both for copilots and naval flight officers. I was in training for the latter, when Washington sent down a directive saying that the people who finished first through fifth in my class and the class behind me would have to go into intelligence because there was a shortage of intelligence officers in the Navy.

(U) This upset the aviators, but nevertheless, I was committed to the intelligence pipeline. So I began my career in 1963 as all young naval intelligence officers start off, as a specialist in intelligence. Of course, the Navy has two officer career fields built around intelligence, one in intelligence and one in cryptology.

(U) **Did most of your subsequent assignments remain in the intelligence track, versus cryptology?**

(S) Right. In Navy terms, I'm an intelligence officer, a "straight" stick" intelligence guy. All of my tours were Washington-based or fleet-based operational intelligence tours, including command of the Suitland Naval Operational Intelligence center, the predecessor to the Maritime Intelligence Center. I was also Director of Long Range Planning.

(U) **And from there to Director of Naval Intelligence, followed by Director of NSA. NSA must have been your first full-time "technical intelligence" assignment.**

(U) Well, naval intelligence is highly technical. The naval intelligence generalist in the Navy is brought up with the idea that most of the intelligence we deal with is technical. It's acoustic, it's SIGINT. Naval intelligence doesn't have much HUMINT, and much of what we have is overt. The HUMINT activities we do have in the Navy have always had to struggle to compete with technical intelligence. The cultural ethos of naval intelligence has always been technical, but within that technical framework, multidisciplinary, with emphasis on putting things together and building processes for moving that intelligence to the user. You need to have constant interactions with the user, and proximity to the customer is one of the most important dynamics of the system.

(U) So, I dealt extensively with SIGINT, and SIGINT issues, and SIGINT liaison throughout my career. So, there really wasn't a surprise to me when I came to NSA. What was different was getting to know the culture and the bureaucracy as a Defense agency, as a combat support agency, and as part of the Intelligence Community.

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(U) **Did the Navy's emphasis on proximity to the user influence your actions as Director of NSA and later as DDCI?**

(U) There is the sense that the SIGINT system is isolated, that it exists somewhere at Fort Meade. And to a degree, CIA has the same potential problem or at least the perception. One of the things the agencies have had to deal with is the need to be better connected with their customers on the one hand and their counterparts in the Community on the other hand. What you always worry about is the danger that an NSA, for example, becomes a closed culture. And you have to "manage around" that perception when you come into a leadership position in an organization like NSA or CIA as an outsider.

(U) **How much of a struggle was that in your NSA and DDCI positions?**

(U) It's not really that much of a struggle. I find if you appeal to people to reach out and consider those wider issues, they'll do it. Sometimes they need to be nagged, but throughout this period the idea of Community or corporateness has been so important that it couldn't be ignored or denied. Sometime you have to attach a "to kidding" message to this effort, but we really are required to build within the Intelligence Community an analog to the jointness efforts that exist in the military. This Community should operate as a Community; if it does, the whole will be greater than the sum of the parts. We are also clearly under the obligation to reduce duplication. Clearly, there was a lot of duplication in the system. So, I was fortunate in being able to work in one culture at NSA and then to come over here to CIA and the Community environment to work on projects that furthered the concept of Community.

(U) **The analogy between the Defense Community as it attempted to work out the problems of jointness and the Intelligence Community is an interesting one. Where is the Intelligence Community in that process, compared to a community that has been at the process for a longer period?**

(C) I think the Intelligence Community has made significant progress. The orientation of the leadership has shifted substantially.
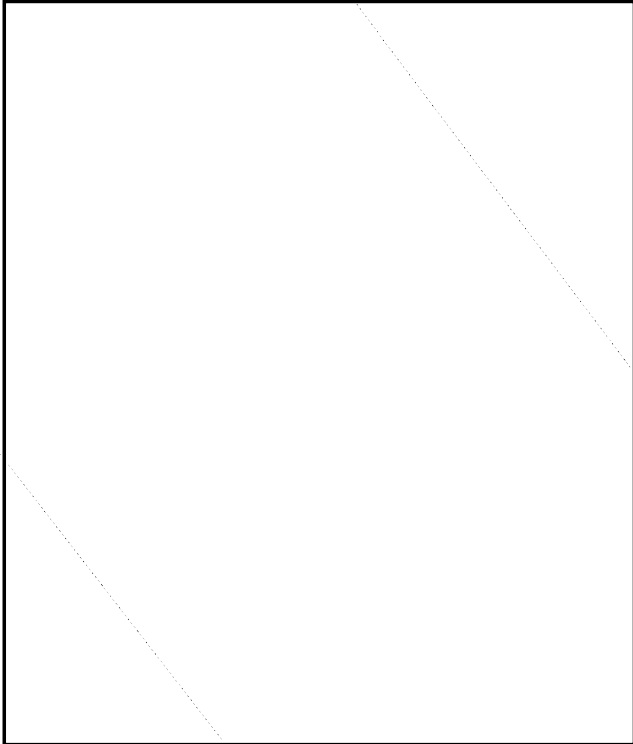
(U) Certainly it would have been more common before 1991 or 1992 for an NSA officer to spend part of his or her career in the UK at Government Communications Headquarters [   ] Is all this driving around the Beltway worth it?

(C) That's an interesting question from several dimensions.

[   ] Point number two is that we are burdened by the fact that the Community is spread out from Fort Meade to the new NRO facility past Dulles Airport. This physical separation is a problem, because it keeps the culture apart. As much as we thought things like secure videoconferencing would solve the problem, that really hasn't been the case. The truly frustrating point about the problem of physical separation is that it has the effect of keeping organizations and cultures that are actually very similar in character apart.

(U) **That's a sentiment I've never heard expressed.**

(C) It's true. I came to CIA after having been
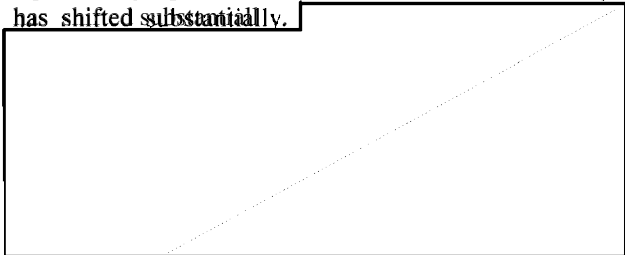
through a whole set of issues at NSA, and I found the same problems.
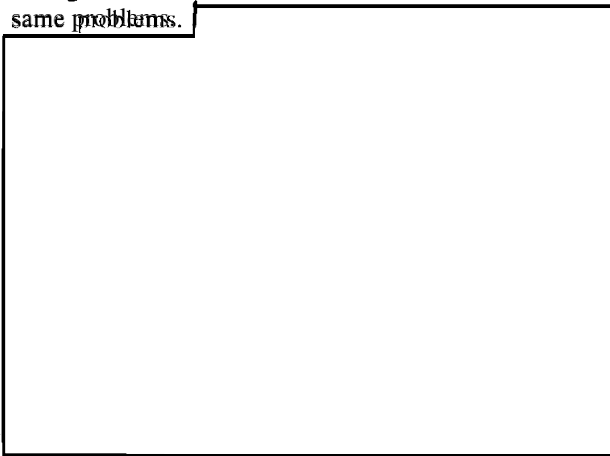
(U) The issues associated with the implementation of quality management, the requirement to get people out of their fortresses, and the degree to which the culture here, the needs of technologies, the family orientation of the personnel. You can go on and on. These are at least sibling organizations, from the point of view of management challenges.

(U) Would you want to see the recognition of these similarities and the move toward jointness extend to the creation of a Foreign Intelligence Service, analogous to the Foreign Service, where people get hired into the service and are then assigned to one agency or another?

(U) No. I think an efficiency expert who doesn't know anything about the business areas of the agencies might suggest that. But I wouldn't. These are distinct business areas, each of which requires core competencies which are difficult to sustain even given the scale of the existing supporting cultures. The SIGINT and INFOSEC businesses, for example, are very complex. If you're going to discharge the responsibilities associated with those business, or any of the other business lines, in the Community, effectively, you have to establish a center of gravity. That means you have to establish accountability and coherence. Otherwise, you would find the business areas watered down by considerations that would make it difficult to keep focus on the various primary missions we're set up to deal with. It's just like corporate life: consolidation is important, but one must recognize points of diminishing returns. These are large structures, tens of thousands of people even with downsizing, so the idea that you could package all of this effort in a single structure is an idea whose time has not arrived, if it ever will.

(U) You mentioned downsizing, and that is the

environment you encountered both at NSA and as DDCI and Acting DCI. How serious a problem has that been for the leadership?

(U) Let me elevate the question up a level: The fundamental problem of recent years has been moving the Intelligence Community from the Cold War to a different world, one that is not yet clearly defined. With that challenge up front, a whole host of issues present themselves, not least of which is "What is the world of tomorrow going to look like?" Ultimately, instruments like PDD 35 will define the grounds on which intelligence has to operate. During this time, we had to deal with downsizing and reengineering issues. And we had a number of problems, especially for CIA, and even more particularly for the clandestine service-with Ames, the French spying issue, Guatemala, class action suits or individual suits by women in the agency; and these greatly complicated the work of the leadership in making the transition the community.

(U) But that transition remained the most important objective. And I think the leadership of the intelligence agencies understood that. I certainly would like to think they understood that. We put heavy emphasis on studies and task forces to look at various aspects of the issue. By the time Jim Woolsey left, we're probably looking at upwards of 125 studies on various aspects for the transition problem, everything from politicization, to covert action. And that's the essence of the legacy of this transition period.

(U) I believe this effort has put us in front of the rest of the federal government in the reinvention effort. We started downsizing before anyone else did, and so on. Only history is going to tell us whether these actions were the correct ones, but I don't think we had any alternative but to make these transitions. We've gotten out ahead on issues affecting incentives in downsizing, with ideas on civil service reform, which I think Director Deutch is going to be talking about in the near future.

(U) We had a major task in shutting down much of the Cold War architecture and determining what our future architecture was going to be. There's been an incredible richness in the issues confronting us during this period, and they all come together to define the future of intelligence. None of the rest of the federal government is close to doing the sort of work we've done on our future.

(U) The problems we've encountered in the transition we've been dealing with have left a morale effect, and that's part of the downside. But in the long

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run, I think it's been fortuitous for CIA, and with it the intelligence community, to go through this process. At times it has seemed like we've been hit between the running lights with a two-by-four, but maybe that's been a wake-up call. The benefit may be that we will be reformed before anybody else. We have an opportunity to use our internal work, along with the work of the Aspin-Brown Commission, IC 21, and all the other external studies, to process this work, go forward with legislation where required, and gain a renewed endorsement for American intelligence.

(U) Let's return to the endorsement issue in a bit, but it's very clear that you see all the effort and turmoil of recent years as ultimately necessary and even therapeutic.

(U) One part of your reputation that preceded you here was your interest in management techniques, and your belief that we had not incorporated management practices, especially quality management in what we do. It won't surprise you to hear that some people do not share your enthusiasm.
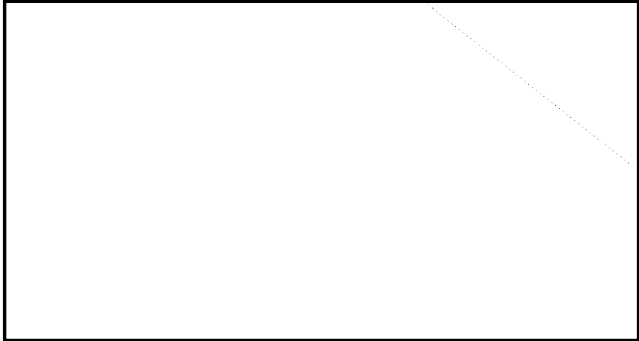
(U) Let's go back to the endorsement. Beyond issues of internal management, there is always going to be some skepticism—in the Congress, among the public—that what we do is inherently suspect. Tolerable during wartime perhaps, but less so in peacetime.

(U) I think you're getting at the openness and demystification issue, and there's no doubt we could have done a better job articulating to the American people and others who count, including the Congress, why we need a capable, robust intelligence system. What I worry about is that you can't assume we're going to make as a nation the commitment to intelligence we've made from the 1980s on. This was a heyday, in which intelligence made extraordinary contributions. Unfortunately, we've been so close that I don't think this contribution is appreciated, either by decisionmakers, nor by historians, as well as by the country at large. We have an obligation to be more open—and we now operate under a directive to be more open. Openness is a difficult issue to manage, and you're always going to be struggling over where to draw the line.

(U) One of the things you don't want to do is be naive about how much people really know out there. The recent series of Baltimore Sun articles on NSA prove that if some serious investigative reporter wants to network around and do a serious look at an agency, the reporter can ferret out more information than the system is going to be comfortable with. That said, the example points to the dilemma of having to be more open, and if this is not a contradiction, in a controlled way. Jim Woolsey always cautioned about the use of the term "openness," because we didn't want to imply that we were fundamentally opposed to having people come in and just forage around. I don't think that's what we've meant by openness, but it's a difficult process to define what it means to be selectively open. It's a tricky issue. And a lot of it needs to be focused on the historians as we declassify.

(U) One aspect of the endorsement issue is

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endorsement by oversight bodies, giving them a picture we cannot give the public at large and in effect having them vouch for us. How would you describe your experience with the oversight committees?

(U) We all have tactical frustrations, but I'm a big fan of oversight, whether its from the Congress or from the President's Foreign Intelligence Advisory Board, or from within. The way I look at it is this: Intelligence, in order to do its job, has to be out there at the leading edge of propriety and legality all the time. Our obligation is to penetrate targets that represent threats to the United States. In order to penetrate those targets, you have to be very aggressive in your technology and in your operational concepts. You really want an oversight process to protect you from yourself, and in regard to resources, you might be able to determine that the interaction between the Congress and the Executive Branch has expended some taxpayer money, the product of that interaction has been more positive than negative. In fact, dramatically positive. So I have a very upbeat view of oversight.
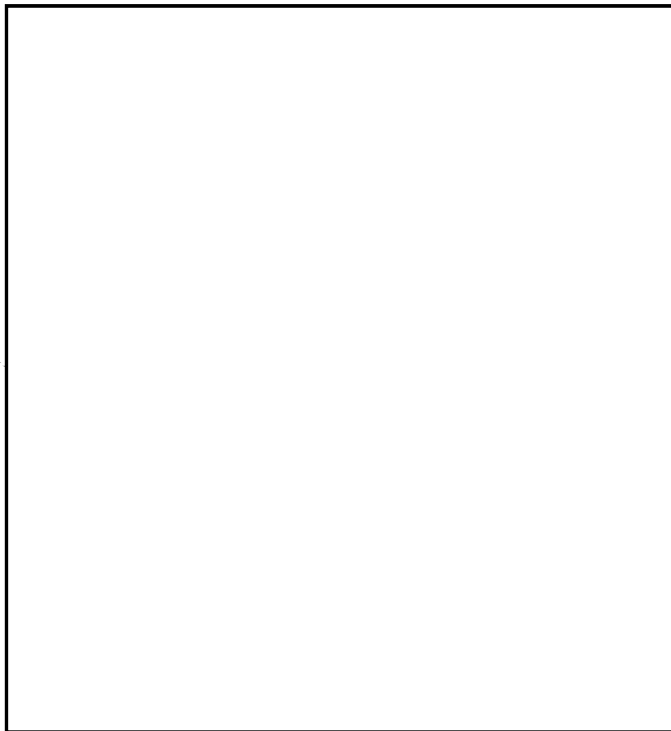
(U) I do hope that the Brown Commission will come out with some recommendations to "thin down" our resource burden. The number of committees to which we are accountable for various functions creates a lot of drag for the Community, using resources that could better be expended on targets. As a manager, I want to put mission first. I told the Brown Commission that if you told me declassification would cost $200 million per year, and if I had the option to spend that on modernized SIGINT, I'd rather buy the SIGINT.

(U) We're headed toward a real investment crunch, and I would rather buy tooth than tail.

(U) Where is that going to occur?

(U) One of the significant issues of the last decade has been the emergence of open source and its impact on policy makers. Have we managed that effectively?

(S) I don't think we've managed it at all badly.

(U) If you had the opportunity to take on, at this stage of your career, a study to deal with any single aspect of our business that has nagged at you, what would that be?

(S) Certainly, clandestine activity is the thing that has the highest risk for embarrassment, as you've experienced.

(U) Sure, but there are structural changes you can make to manage this. Counterintelligence is another area of interest, and it's an area we tend to take for granted. The whole issue of foreign intelligence and its coordination with law enforcement, information warfare, information security (especially as it relates to commerce and banking)—there are any number of areas you could deal with. That's what makes this business so interesting at the moment. It means that DCIs now and future will have to build on the work that's been done by some of the studies we've talked about. No matter where you turn, there are interesting issues out there.

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(U) Overall, how do you think we've done convincing Congress and others that this is a principled, competent set of agencies capable of performing its mission?

(U) I'm not trying to be political in making this statement, but I don't think we've been successful with the current administration in even being defined as being a relevant part of the national security team. And I'm sure the DCIs have been frustrated by it. When you have CNN announcing that the President is meeting with his national security team and you know intelligence is not represented, that's a source of concern.
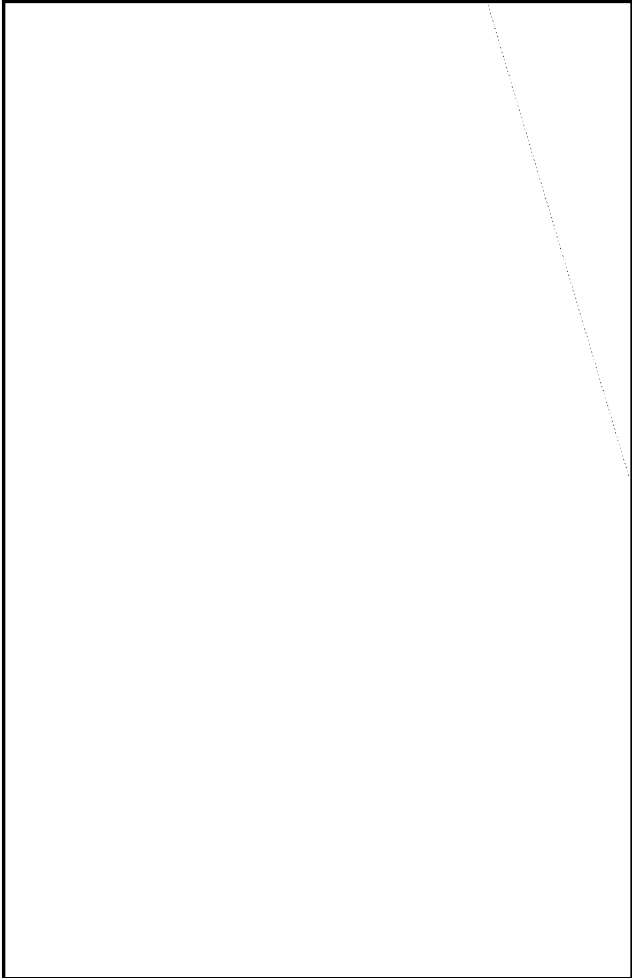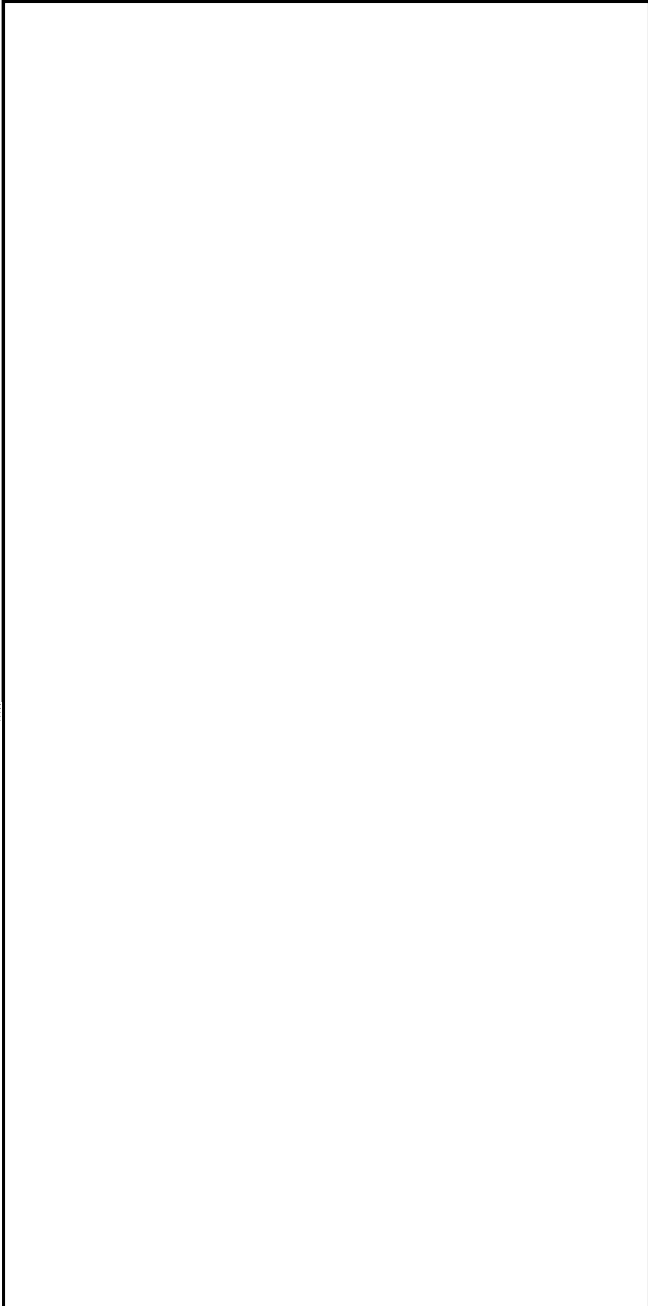
(U) We've talked about a lot of ups and downs affecting intelligence in this transition period. If you were speaking to undergraduates or graduate students considering a career intelligence, would you encourage them?

(U) Nothing is more wonderful. I spoke this morning to the National Youth Leadership Forum, a group of high school students interested in intelligence, diplomacy, and defense. I concluded my remarks by telling them there was never a day—no matter how bad things got—that I didn't get up and look forward to coming to work in the business of intelligence. It's that fascinating. Particularly if you step back and truly understand its importance to the security of the country. And when you think about the nature and character of the people in the Community, nowhere in the federal government have I run across the skills and character, even management ability, that you'll find in the Intelligence Community. It's a unique set of people, and I think even those of us in the business need to reflect more frequently on that.

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The most recent presentation of IS-355 (Current Issues in SIGINT Policy) was an inter-agency conference on Responses to Humanitarian Crises: the Role of Classified Intelligence, co-sponsored by NSA, CIA, and the State Department. The opening speaker was Ms. Toby Gati, Assistant Secretary for Intelligence and Research in the State Department. <u>CRYPTOLOG</u> *thanks Ms. Gati for permission to reprint her remarks.*

Humanitarian Crises: IC Support to U.S. Foreign Policy

(U) Thank you, Mr. Taylor, and thank you, Elizabeth McGranahan, for organizing this conference. It is proving very timely given our high-level policy interest in Eastern Zaire's humanitarian crisis.

(U) I am pleased to see that this event is co-sponsored by NSA, CIA, and the Department of State because the foreign policy and intelligence communities are partners in tackling humanitarian crises. We work on different aspects of the problem, but we need each other if we are to respond in a timely, proactive, and cost-effective way. For the rest of the day you'll be listening to intelligence experts, as well as some important NSC and Pentagon customers, talk about the various roles of intelligence in shaping the U.S. government response to humanitarian crises. They'll give you case studies and specific do's and don'ts. My talk this morning will be on the basic issues that we need to understand before we can determine the appropriate role of classified intelligence in responding to humanitarian crises.

(U) For example, when we look at a "humanitarian crisis," are we sure we all look at it in the same way? When does it begin and end? What is it we are trying to accomplish? Who are the key actors? How are they being served? What kind of information-open source, diplomatic reporting, non-governmental organization (NGO) reports-is most useful? And finally, what kind of intelligence is required?

(U) Case studies and postmortems of such crises as Somalia, Sudan, Liberia, Bosnia, and Angola point

(U) We need intelligence before massive refugee flows begin, [and] that's where we can help.

out that humanitarian crises are complicated, messy problems involving a number of actors often working at cross-purposes. They also clearly show that many times at the bottom of the pile of humanitarian mission goals and logistical plans is the failure of the international community to make a serious commitment to tackle root problems.

(U) Rwanda is a case in point. We have been going around for several weeks now within our government and with other governments over a common plan for intervention. Many actors thought the main task was just feeding people-so what's the problem? After all, we did it in Goma in 1994; why can't we do it again in 1996? Well, Goma is not the same place now that it was then and we can't impose the same type of intervention. I remember that we wrote a memo in 1994 saying the repatriation of Rwandan refugees would be the international community's biggest headache if refugees could not be quickly separated from the Interhamwe Hutu militia and former government soldiers. So the current crisis did not begin in the fall of 1996; it is not a surprise; and the fact that we have little information and were unprepared for it ought not to be a surprise either.

(U) So, while feeding several hundred thousand Rwandans is a key part of the mission, there is a lot more here that we need to grapple with-and that's where the IC can help. We need intelligence *before* massive refugee flows begin. We need good embassy reporting, analysis, FBIS reports, ██████████ defense attache assessments. We also need to take bet-

ter advantage of crisis-focused databases and assessments by *non-intelligence* agencies, particularly relief agencies who have experts on the ground.

(U) INR and the Department of State have supported one such crisis information system, ReliefWeb, which is an Internet-based, interagency network maintained by the UN Department of Humanitarian Affairs (http://www.reliefweb.int/). It aims to serve as a one-stop shop on the information highway for crisis-related information, including the latest UN High Commission for Refugees and NGO situation reports from Rwanda. The IC needs to appreciate the value of these kinds of databases for U.S. interests, and where appropriate help fund them.

(U) Military intelligence from DIA is also critical. For example, can we really think about sending the military in without knowledge of the military factions that are manipulating the refugee flows? Can we ignore the fact that among the refugees are several thousand who are guilty of horrendous murders? Some of these problems are being decided for us, putting policy-makers in the reactive rather than the proactive mode. For example, while we were arguing about how NOT to disarm the Hutu militia chiefs who were holding a half million hostages, the Zairian rebels went in and pushed 600,000 refugees back to their home villages in Rwanda; in two days they changed the whole context of the crisis—which put us and our allies in the quandary of how to respond to the new reality.

(U) For sure we will need to stay engaged after the refugees return. Their reintegration will not be easy, nor can we give up prosecuting those who have committed genocide. For the U.S. government, the crisis will not be over until we ensure a degree of stability and security in the region. For the intelligence community, it means we have to do more than count refugees with imagery or intercept military communications—it means putting the pieces of the crisis puzzle together. If the IC cannot provide analysis in a concise and timely way, we cannot help the policy-makers, and the lives of U.S. soldiers and civilians—some of whom are in Rwanda right now trying to figure out how to help—may be threatened.

(FOUO) If for us at State this crisis began months ago, I fear that for the IC such crises all too often only begin when the Pentagon starts planning for possible military intervention. Let's be honest, when the guys with four stars on their lapels get *excited* about a crisis

(U) Let's be honest, when the guys with four stars on their lapels get excited about a crisis as opposed to just curious, that's when people, resources, and dollars start to flow;

as opposed to just *curious*, that's when people, resources, and dollars start to flow. We at State deal with crises every day, especially in Tier 3 and 4 countries. We first of all try to *prevent* a crisis from getting to the point where our troops might need to go in. But diplomacy gets a lot less attention—though dollar for dollar, it is a much better investment for the taxpayer than it is to send in the cavalry and the intelligence support that goes with it. We know that a crisis begins long before the "CNN moment" of seeing starving babies on TV, but diplomatic interventions are tricky, frustrating, and drawn out. They do not provide very dramatic coverage—unlike the storming of a beach or airfield—but it could be preventing, at least for the time being, a civil war, which incidentally is the major cause of humanitarian crises.

(S-CCO) If this makes sense to you, then ask yourselves: When the Great Lakes crises began, where were the resources for support to diplomatic operations? What happened to our African coverage in the last three years—to FBIS?

What were the unintended consequences of [   ] and the Tier process? And then ask yourself: how have the State Department-related budget cuts—which since 1984 have resulted in a 51% funding decline in real terms—affected our ability to negotiate a way out of situations like Rwanda?

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(U) Our focus on the IC, on State, on Defense also has to be put in context, however. Relief organizations, NGOs and others were in Rwanda, in Zaire, in Burundi *before* the crisis and will be there *after* this crisis. They know a lot about the crisis and expect to be involved. We have to exert leadership—but also to recognize that part of our mission is to play a support role so others can continue to do their work. Their agendas do differ from ours, but we need to work together.

(U) This support function gives us two complementary roles, one overt and one covert. Overtly, we should be providing to our partners on the ground, including UN and non-governmental organizations, as much useful unclassified or declassified information as possible. Why? Well, it is NOT because we want to give away U.S. secrets to irresponsible UN bureaucrats (as some in the press seem to think). Let me emphatically state here that intelligence sharing—whether its purpose is to help tackle a humanitarian crisis or any other multilateral mission—has to be in the national

interest, or we should not do it.

(D) In this case, it is clearly in our interest to provide sanitized intelligence and unclassified products, such as LANDSAT and SPOT imagery, that can be used to help relief workers—who, after all, are working the front lines of a crisis. We should and we do carefully screen such intelligence-derived reports through an interagency process, but we have also provided unclassified data in a timely way. (An example of this has been the use of unclassified, updated maps showing locations of refugees and others in eastern Zaire.) This type of support has helped target the distribution of food, medicine, and water, which can mean fewer dying people, fewer costly logistical problems, and most importantly, a speedier resolving of the crisis, at least this phase of it.

(POUO) While the data itself might be unclassified, it still might require the IC's tremendous SIGINT capabilities to collect it, organize it, and distribute it, in paper or electronic form. If the IC's goal in a humanitarian crisis is to help achieve U.S. foreign policy objectives, we have to think more strategically about what types of information—classified or unclassified—are most useful for what types of crises and how the IC's great information management strengths can be brought to bear on solving crisis-linked problems in Tier 3 and 4 countries where the U.S. government has a minimal presence. FBIS reports are an invaluable source of information on crisis-prone regions. We should be augmenting, not cutting, FBIS.

(U) Now, I'm not advocating *only* "open sources";
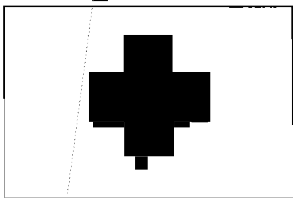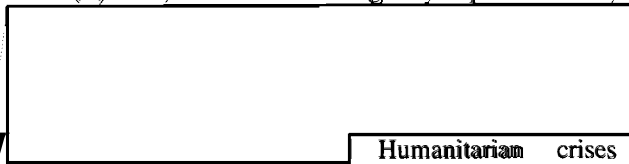
Humanitarian crises always have a political dimension to them: they are often caused by power-hungry politicians and soldiers; relief efforts are manipulated by militias; and those who create the crisis are armed via transnational black markets. In sum, humanitarian crises are often the creations of not very pleasant and usually desperate individuals, and we have to deal with them in some way if we are to save lives and resolve crises.

(D) The role [   ] should be to help policy-makers work with or around these crisis manipulators—unless of course we want to take them

head on, which doesn't seem to be a popular option these days because people get killed doing that. For the IC—and perhaps for this conference—this means that we need to come up with better intelligence on the motives, actions, and intentions of key players as well as a way to provide that timely intelligence back to our policy-makers in D.C. and out in the field who are trying to figure out how to intervene effectively. Just like the "open" information, good SIGINT or HUMINT can save lives by making us smarter than those trying to block our humanitarian efforts. It may be less direct, and I hope it would get much less publicity, but its importance in an overall U.S. humanitarian intervention strategy remains critical. At State, the presence of the Cryptologic Support Group helps us enormously to get SIGINT quickly. Now, NIMA and the NRO are working with us to get imagery to us, too. But until those same maps and satellite photos can get to our ambassadors "on the scene" with the same speed as intelligence gets to a general in the field, we are not doing our job well enough.

(POUO) Just as we need to know the intentions of belligerents, we also need to maintain a knowledge base about the context of the crisis. This would include databases on such variables as population distribution, agricultural production, land tenure, and ethnic composition; these are not necessarily "academic" types of information; we are finding out they are essential for effective crisis management and that they cannot be developed within a few days or weeks. In addition, we need to think about investing in shared sources of reliable, region-specific information (perhaps available through Intelink), and creating a roster of crisis experts ranging from in-house intelligence experts and linguists, to scholars and NGO relief professionals. But we can't rely on these people to fill in the gaps if we haven't done our homework first. "Surging" is not a substitute for knowing.

(U) Let me end by emphasizing again that today's humanitarian crises do not leave us with easily defined missions, clear roles for participants, and firm ground rules. They require determination, flexibility, and a serious commitment of resources. But they also require us to be smart about how we go in to help the victims of war so that we are not manipulated or ineffective.

(U) The job of the intelligence community is to help make policy-makers understand complicated and fast-moving events and to deal with the competing inter-

ests that make up a crisis. If you here at this conference contribute to that learning curve, you will have served our national interests well.

(U) Ms. Gati is responsible for analytic studies and intelligence assessments essential to foreign policy determination for the Secretary of State. She is also responsible for coordinating departmental programs of intelligence, analysis, and research with other Federal agencies. She has previously served as Special Assistant to the President and Senior Director for Russia, Ukraine, and Eurasian States at the National Security Council. She has been Senior Vice President for Policy Studies at the UN Association of the U.S. and is a published author whose work has appeared in various periodicals and books, including *Orbis* and *The Washington Quarterly*.

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- **Great Lakes Crisis:** The Latest – updated twice daily.
- **The Bulletin:** now available via Email.
- **Map Center:** contains over 150 maps.
- **Search:** full text search capability.
- **Financial Tracking Database:** updated Dec 1.
- **Document Submission System:** for posting documents to ReliefWeb.

We strive to update at 1200 GMT and 1800 GMT.
[Project Description] [Mandate] [Press Release]

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(FOUO) As the following article explains, FOLKLORE had its origins in IDASYS, developed back in the 1960's. A small team of operating systems specialists from NSA took IDASYS and molded it into an industrial-strength system NSA's supercomputers of the time, mainly in support of the cryptanalytic community of users. A highly innovative and highly responsive system, it was a standout during an era of batch-oriented systems. It served a specialized set of NSA users for 25 years before the last FOLKLORE system was recently retired. It provided capabilities and features that some believe are still unmatched today, although it finally had to give way to the fast pace of technological change and the considerable resources that industry eventually applied to the supercomputing arena. There are still some old-timers around who can tell war stories from the FOLKLORE era and the successes that it enabled. FOLKLORE is a significant and rich part of NSA's heritage.

[_____] Chief Information Officer and chief of E Group (DO Information Technology Applications Development and Support), participated in the development of NSA's supercomputer development; he was the first chief of the division that took over support for and maintained FOLKLORE.

FOLKLORE:
An Innovative Approach To A User Interface (U)

by [_____]

(U) The purpose of this article is to provide a historical perspective on the user interface characteristics of a 1970's operating system which was very responsive to its customer needs, extremely user-friendly, and anticipated many of the features that are common place today. Most computer operating systems developed prior to 1980 (before windowing systems) presented the user with a command prompt. Editors had to be explicitly executed. In contrast, the FOLKLORE operating system took a different approach. The edit and command modes were one and the same! All interaction was full-screen, not one line at a time!

(U) The IDASYS operating system (as FOLKLORE was known in the beginning) was developed in the late 1960s at the Communications Research Division of the Institute for Defense Analyses (CRD/IDA), Princeton, NJ. It was a highly interactive, multi-user system for the supercomputer of the time (CDC 6600). IDASYS was designed as a supercomputer operating system to provide full supercomputer responsiveness to the user. The target user population was the IDA and NSA cryptanalytic community. IDASYS was renamed FOLKLORE in the late 1970's when NSA took over full support and maintenance of the operating system. FOLKLORE was easy to learn to use for both end-users and software developers. It allowed a lot of flexibility and creativity to be put to productive use rapidly. FOLKLORE survived over twenty-five years. On January 31, 1996,

still popular with its users and running on multi-CPU vector processor systems (Cray X-MP), the last FOLKLORE system was powered down.

(U) The user interacted with FOLKLORE through a terminal (CRT and keyboard) using a full screen display for both editing of files and executing commands. In the early days this terminal was a directly connected CDC 210 terminal. Soon a Raytheon Programmable Terminal System (PTS) replaced the 210. The PTS terminal concentrators were eventually networked to allow access to multiple systems from one terminal. Finally, in the late 1980s, networked IBM ATs and SUN systems were used with a PTS terminal emulation window. This last development enabled FOLKLORE for the first time to display high-resolution graphics on the user's terminal.

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(U) Since the PTS handled the character display and cursor movement, the supercomputer was freed to handle only function key actions. This greatly reduced the number of interrupts that the FOLKLORE operating system had to handle. A FOLKLORE design goal was to deliver the full power (99%) of the system to the users and respond as if it were a single-user system. The PTS contributed a great deal toward meeting this goal.

(U) The window size was a maximum of 22 lines long and 80 characters wide. The lower two lines generally contained information such as file/program name, keyword and line number. This made the effective browsing window 20 lines. The FOLKLORE system input/output (I/O) functions for terminals were designed to make displaying 20 lines of data and/or two lines of information easy. Because the system I/O functions were readily available to FOLKLORE software developers, they could write interactive programs easily at a time when most users were interacting through decks of cards. Terminal I/O was a matter of filling a buffer with the data (which would appear on the screen) and issuing the function call. Other systems which had terminal access were generally graphics- or line-oriented and did not have many interactive programs except a few text editors and applications written by expert programmers.

(U) The FOLKLORE operating system handled all function key access simply by storing the value of the function key and some user-related information in a table. Programs then checked that table or asked to be interrupted when the relevant table entry was filled. The STOP key generated a program interrupt which could be handled via an error/interrupt handler or, as the default, the system would terminate the program and return the user to the editing state viewing a diagnostic page in a system file. FOLKLORE had a diagnostic file which contained an appropriate message, picture, or instructions with one page for every system error

number. The FOLKLORE edition response to the STOP key was to display the beginning of a user-defined default file. Program error handlers often reset the user environment to display an error message and allow quick access to the program output file.

(U) FOLKLORE function keys had names, not F1, F2,..., but STOP, GO, +PAGE, -LINE,... This encouraged software developers to use the same key for similar functions. The labels helped the user to remember which key did what. FOLKLORE software developers also made use of simple features which allowed them quick access to source code for almost every program, especially system-provided programs. Also, most programs could easily be called as subroutines. When a function similar to another was needed, it was simple to discover the underlying source, check related documentation for possible parameters, and copy as much or as little as desired. Much FOLKLORE code was reused because it was easy to do so.

(U) Upon successful login to a FOLKLORE terminal, the user generally saw the system wisefile. New information was placed at the beginning of this file so that the user would see it as soon as the logon process was completed. At this point the user could browse this file, type a file name to browse/edit another file, type a command to execute a program, or use one of the function keys as a shortcut to executing a command or editing a file. Whether a user could actually modify the file that is being viewed depends on whether the user has write-access to the file. FOLKLORE file access control has been covered in a separate paper, *FOLKLORE: One Approach to Security.*[1]

(U) The FOLKLORE editor, program loader and batch command processor were tightly integrated to

1. *Cryptologic Quarterly* Fall 1994, Vol. 13, No.3.

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create a unified user interface. Although there were multiple editing processes, they all performed similarly. The actual process in use was determined by the function requested by the user, not by a specific command. Most of the editing services were provided through a single system daemon which handled every terminal (except the system console). For the purposes of this paper, all of the editing processes will be referred to as the FOLKLORE editor. This was the FOLKLORE interface. Every user interacted with it.

(U) The program loader was invisible to the FOLKLORE user. Commands were entered, the GO function key pressed, and the user was back (immediately in most cases) interacting with the editor usually viewing the program output. It did not matter whether the file associated with the command was a fully linked executable, a relocatable version of a main program, or a relocatable subroutine/utility. The program loader "automagically" figured out what to do and it happened quickly.

(U) Initially the FOLKLORE batch command handled only a serial sequence of commands, but it evolved to provide several types of error handling, nested sequences, and the usual logic constructs of today's command script languages such as the UNIX shells. The batch process basically passed each command line to the program loader just as the editor did and the editor returned control to the batch processor when the command completed. The user could tell what was currently being executed because the program loader displayed the program name in the information lines at the bottom of the display window.

(U) FOLKLORE did allow users to customize a few things. The user specified a file to be displayed when the STOP function key was pressed, a default file to be displayed via the ALT function key, a command to execute via the PROG key (to save typing a highly used program name), strides for the -PAGE, -LINE, +LINE, and +PAGE function keys, TAB stop settings, and a file to contain setup information. This setup file contained such information as a list of files to checksum, print header and classification definitions, and lists of files used to build and include program libraries. This customization information could be specified for multiple alteregos, so that the user could change his environment by changing the alterego that he or she was running under. (Alteregos are explained in the previously referenced article, *FOLKLORE: One Approach to Security.*)

(U) A design decision for FOLKLORE allowed unique features to be provided by the editor at very low cost. That is, FOLKLORE text files are contiguous files with an end-of-text string. There were no carriage return or tab characters embedded in the file. These keyboard keys were simply cursor movement keys. The carriage return moved to the beginning of the next line and the tab key moved to the next TAB stop. At the bottom of the display, all cursor movement keys wrapped to the top of the screen. In fact, all FOLKLORE files are contiguous files with no structure except that supplied by the application that produced it. The FOLKLORE editor can be used on any file. Of course, editing an executable file was something best done carefully, but browsing one could be quite useful. Since the FOLKLORE editor does not use carriage returns, but rather blank fills each line to the specified file width (usually 80 characters) some space may be considered wasted. This space was a small price to pay for the cryptanalytic tools that the editor could provide. The block text manipulation feature (BLK) was one very powerful tool. This was implemented in the mid-1980s through a function key and allowed manipulation of text in a rectangle of any dimensions. Common BLK functions were to move, copy, or delete columns of text.
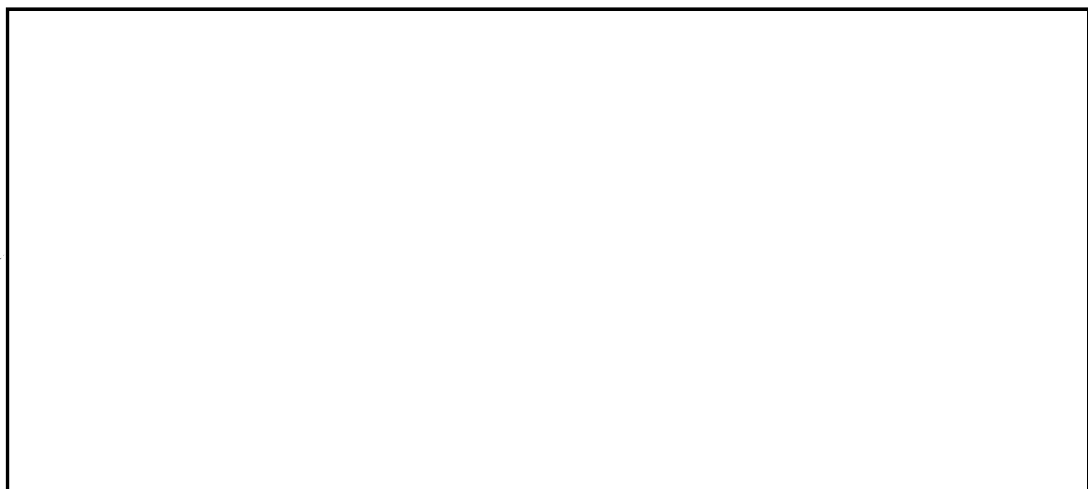
(U) One FOLKLORE function allowed the user to browse a document's index and move directly to a section of the document, in a fashion similar to using today's hyper-linked documents.

Another tool that depended on the fixed width lines was a KEY function which allowed searching quickly down a column. This function was used heavily for searching for left-justified keywords such as message starts. Another use was in browsing the index of a document, moving directly to a section of the document simply by putting the cursor on the line containing the title of interest and pressing the KEY function key. This is similar to using a mouse today with hyper-linked documents, but the cryptanalytic community could do this in 1970!

(U) Programs were executed via the GO function key while viewing a file through the editor. The program name and its parameters were parsed from the line containing the cursor up to the first blank character or the end of the screen. Changes to the display were not inserted into the file being displayed until the INSERT key was pressed. This allowed a user to do full screen command line editing. The user could maintain sample command lines in a file, display the file, edit the appropriate command line, execute it, and retain the original version of the command line. Of course the edited command line could be retained by pressing INSERT before GO if desired. The executing program automatically received some information related to the file currently displayed; the file name, the position of the window on that file, and the cursor position within the window. The program controlled the whole window while it executed. When a function key was pushed during execution, the program could find out the function key number, the cursor position within the window, and the four characters immediately preceding the cursor. FOLKLORE did not buffer function keys. Only the information from the last function key pushed was preserved until cleared or read by a program.

(U) FOLKLORE program source files were generally large files containing the source for many programs. The programs could even be written in different languages within the same source file. The only common thing was that each piece of source began and ended with a left-justified '%' character. Special

functions took advantage of this. The SEND function key would quickly position the editor at the beginning of a particular piece of source code. Since this function searched for '%'s, it even allowed quick location of data sections which were delimited by '%'s.' Cryptanalytic applications often used this mechanism to maintain many parameter sets within a single flat file. Another feature that this scheme allowed was great for program development. That is the COMP function which could be used from anywhere within the piece of source code. FOLKLORE would automatically find the beginning of the code (previous '%'), determine the appropriate compiler from the keyword following the '%', and compile the program. In fact, if the GO function was used from anywhere within a piece of source code, all of the compile functions were performed, all the necessary relocatable files were loaded and linked, and then the program was automatically executed. All of this happened within seconds, so the user did not lose track of the real job that needed to be done. It was amazing how little delay the users were willing to tolerate after having developed experience with FOLKLORE for a short while. In fact, just five seconds was considered unacceptable most of the time. Another common practice, especially useful during debugging, was to keep a sample of the command line within comments at the beginning of the program source code. The user placed the cursor somewhere within the source code, pressed COMP to compile, then ALT to return to the top of the source code, moved the cursor down a few lines to the command line and pressed GO to execute it.

(U) Another commonly used FOLKLORE feature made possible by the responsiveness of the FOLKLORE editor was the use of the ALT function to compare files. The ALT function switched between the current file and the alternate file. The current file became the alternate file and the alternate file became the current file. By using the ALT button quickly, a user could easily spot any differences between the two files a whole page at a time. The screen would appear to stay constant if there were no changes and would flicker in the spots where there were differences. It was quite common to align

(U) Another very useful (and very much missed) feature was the command spelling corrector. If a command was executed that was not found, the system/loader or editor would suggest a similar command or file name and gave the user several options for continuing.

two files, press ALT several times a second, watch to see if the screen flickered, move to the next page of each file, and repeat the ALT sequence. This process would be useless if the switch between files was not "instantaneous"! In contrast, using a file comparison tool could be a tedious series of executions with a varying offset parameter or it could be even worthless without an offset parameter or ability to work on binary data. Suppose a program was changed to insert a certain string of bits periodically in an output data file. These changes between the old and new output files could be easily spotted and verified

using the FOLKLORE ALT method. Even if there would be no change in offset required, the FOLKLORE ALT method would sometimes be faster than typing a command. If there were differences, the user had a full screen of context to interpret the reason for the change. This method worked fine even for binary data. FOLKLORE had a different character displayed for every eight-bit sequence. Therefore, a change in one bit would cause a difference in the character displayed. This change would be seen using the ALT file comparison method. Bit-stream cryptanalysts were familiar enough with the character representation to understand what the difference was and why it was there.

(U) The move to the SUN workstations allowed high resolution graphics for the first time, but some FOLKLORE users edited speech waveforms graphically using the PTS terminals in the early 1980s. The responsiveness of the terminals even allowed some creative analysts to produce animated graphics!

(U) There were at least two important observations made in some research report from IBM 1982.
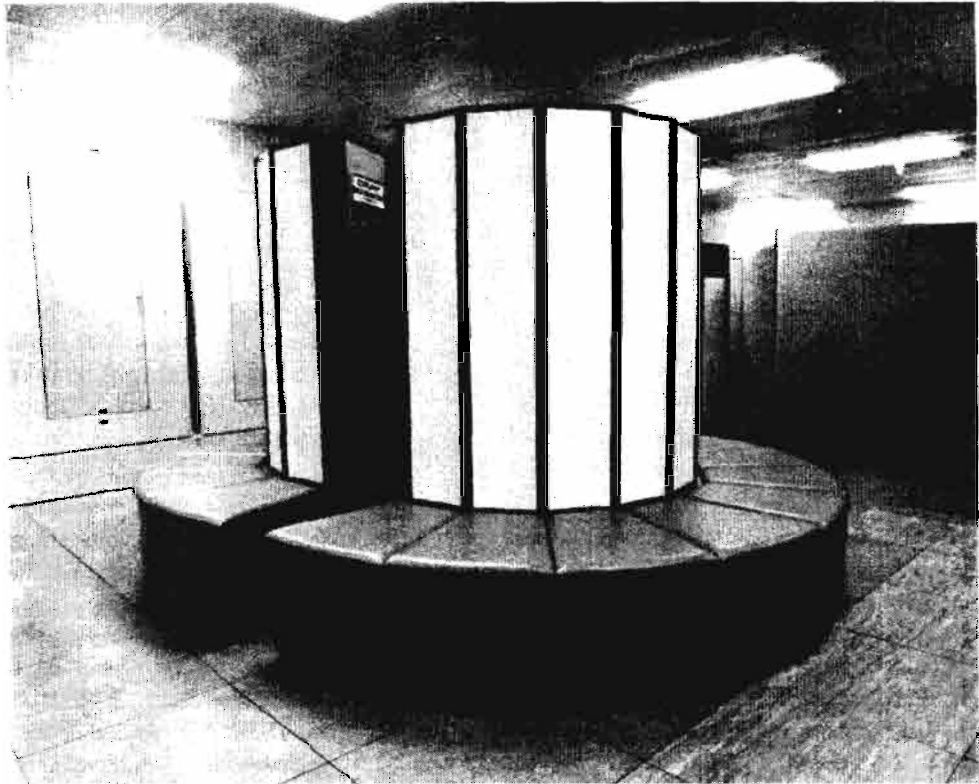
First, as system response time decreases, the quickness of human interaction responses increases more than linearly. Second, all skill levels benefit from this effect. Also, as the skill level of the user increases, the benefit also increases. The cryptanalytic community was not surprised! They had been reaping the benefits for more than a decade by then. In fact they complained about losing their train of thought when anything slowed down by even half a second.

(U) What was the power of the combination of the edit and command mode? Commonly used commands could be stored in a file. The user's default STOP file was often a list of these command lines. The user then simply used STOP to view the file and then selected the appropriate line with the cursor and pressed GOO to execute it. Often applications would embed command lines or file names in the output to facilitate running follow-on programs or viewing multiple output files. This feature was very useful to reduce wasted time caused by mistyping or omitting parameters. BATCH sequences, a series of command lines beginning with "BATCH,**" and possibly including some simple control structures, were also stored in source code

sections and executed via the GO key. This also greatly simplified the automation of modified source code installation. BATCH sequences were also developed and maintained in separate files particularly for reuse in production runs. These were initiated using "BATCH,filename" as the command line. When a BATCH sequence was initiated from within a file, the parameter was '**' and when it was initiated from somewhere outside the file, the parameter was the name of the file containing the command sequence to execute. (Actually there were more parameters, but they are not relevant here). The FOLKLORE convention used '**,' to mean to input data from the current file beginning at the current location. A single '*' meant to input data from the current file beginning at the start of the file.

(U) Although having command lines stored in a file reduced a lot of mistyping and wrong parameters, another very useful (and very much missed) feature was the command spelling corrector. If a command was executed that was not found, the system loader or editor would suggest a similar command or file name and gave the user several options for continuing. Much of the time, the suggested command was the correct one, so only one key press was needed to correct the problem.

(U) Having a single edit/command mode simplified the life of the user. Only one set of behaviors had to be assimilated and repetitive actions could be stored for reuse. Efficient use of time for both the user and the computer was the result. The *de facto* standards for software development set by the operating system software and its user environment reduced the amount of deviation that develops between multiple software

developers. Although FOLKLORE did not have some of the luxuries provided by today's custom environments and the use of COTS products, a lot less time was needed to set up a new user and to learn to use FOLKLORE effectively and creatively. This coupled with the effects of the extremely rapid response time, gave the cryptanalytic community a very productive quarter of a century.
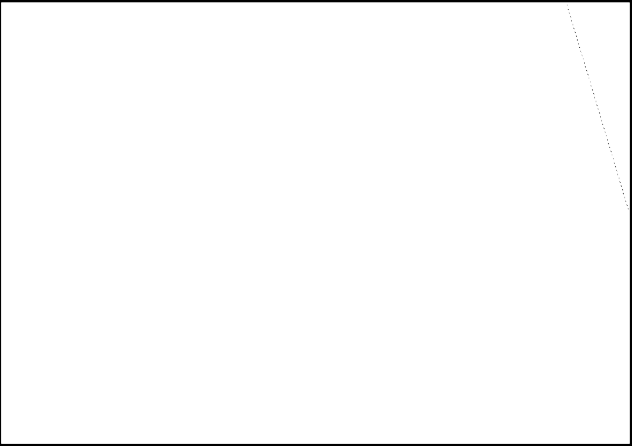
Church-State Relations in the Mexican State of Chiapas: Image v. Reality (U)

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Introduction (U)

(U) The XIX International Congress of the Latin American Studies Association (LASA), which was held in Washington, DC, from 28th through 30 September 1995, provided a platform for renowned Latin American leaders, prominent Latin American literary and artistic figures, career diplomats and politicians, representatives of nongovernmental organizations, and academics to present their views on a broad range of hemispheric issues and topics of interest to students of Latin American culture. Four analysts from B3 were privileged to attend the LASA-95 Congress under the auspices of the DO Technical Health Advisory Board. As one of the four, the author had the opportunity to attend informative and thought-provoking presentations on topics including the transition to democracy in postwar El Salvador, the future of Nicaragua, Cuba-U.S. relations, post-NAFTA Mexico-U.S. relations (with emphasis on the border tensions sparked by immigration policy), the future role of the Inter-American Development Bank and the Organization of American States (each presented by the organization's respective Secretary-General), and the session that prompted this article: a personal view of the situation in Chiapas, the strife-torn state in the southeast of Mexico, as presented by a U.S.-born priest who was expelled from Mexico in June 1995 for allegedly inciting anti-government activities.

Background (U)

(U) In September 1992, when Mexico restored diplomatic relations with the Vatican, Mexican Government spokesmen attributed the step to Mexico's desire to promote friendly relations with members of the international community who shared its goal of world harmony and peace. The restoration of relations, which had been broken off for 128 years, was the culmination of a process that began in February 1990 with the appointment of personal representatives by then-President Carlos Salinas and Pope John Paul II to facilitate communication on issues of mutual interest and continued with the constitutional reform of 1991 that gave churches legal status.
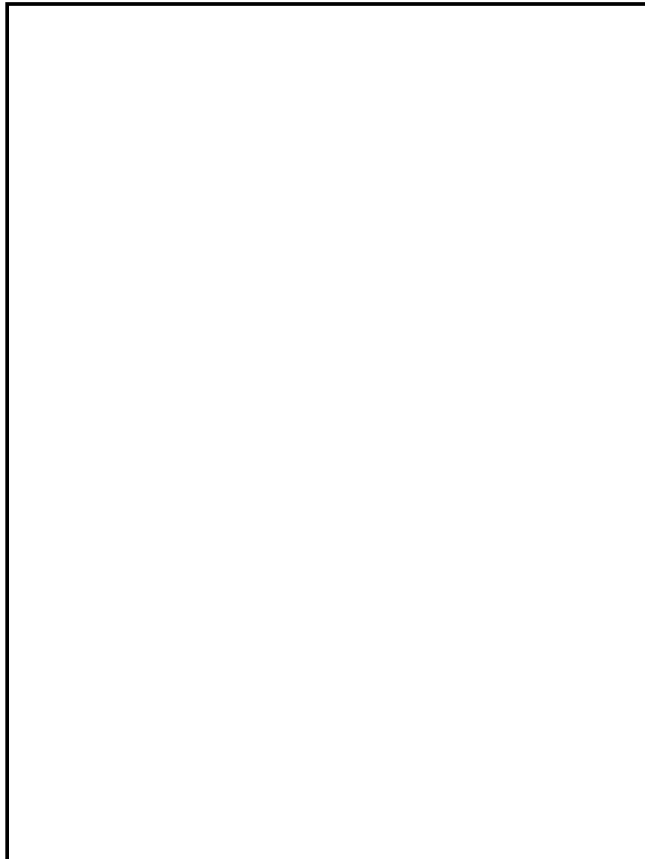
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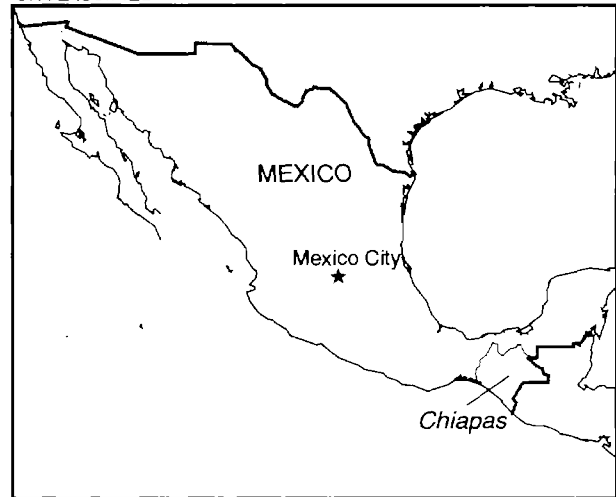
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(U) Then Secretary of Government Patrocinio Gonzalez Garrido, a former governor of the southeast Mexico state of Chiapas, declared in July 1993 that wisdom and tolerance should be the basis of government interaction with the Church, adding that the Mexican government's relationship with the Church was one of openness, harmony, dialogue, and respect.

(U) Such government pronouncements notwithstanding, the archbishop of San Cristobal de las Casas, Chiapas, Samuel Ruiz Garcia, saw little change in church-state relations in Mexico or Chiapas. Responding to a reporter's question on 10 January 1994, Ruiz conceded that some progress had been made as a result of the constitutional reform, for example, in the acknowledgment of the Church's right to operate schools. Nevertheless, the archbishop maintained that the government's fundamental attitude toward the Church had been altered very little. In fact, Ruiz characterized Mexico's recognition of the Church as a cosmetic step taken only to make Mexico fit the image of a modern country worthy of membership in NAFTA.

LASA-95 Roundtable (U)

(S-CCO) Whatever one's opinion of the Church's role in what [   ] the opportunity that LASA-95 provided on the morning of 29 September to attend a breakfast round-table discussion with the controversial Archbishop Ruiz himself was one that would have been difficult to pass up. Several of us arrived early so as to get a seat at what was expected to be a very well-attended session. Anticipation grew as two members of the clergy entered the room, but neither was Ruiz. Soon it was announced that the archbishop's duties had prevented him from attending, and that Fr. Loren Riebe, a U.S.-born priest with over 20 years' service in Chiapas, was to speak in his place. Riebe was among a group of three non-Mexican Catholic priests working in Chiapas who were summarily expelled from Mexico in June 1995 for allegedly fostering anti-government activity.

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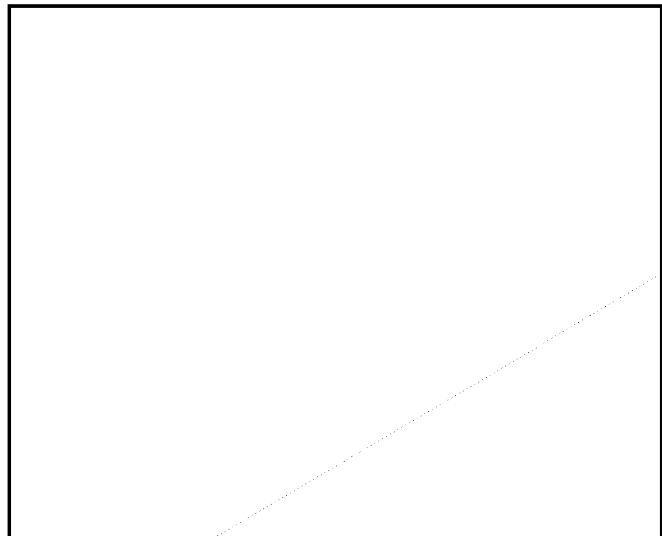(U) **The EZLN's military campaign coincided with the implementation of NAFTA**

nized in Chiapas, but when a 10,000-man march for peace in 1992 failed to get any media coverage it became clear that the only way to focus attention on their grievances was to resort to more violent action, such as roadblocks and demonstrations. Still, Riebe noted, confrontations in 1993 were not publicized because of the negative impact such developments would have had on the NAFTA negotiations.

(U) When the Zapatistas finally decided on military action, they chose 1 January 1994 to launch their campaign, not only because Army troops could be taken by surprise after the revelry of New Year's Eve but also because it marked the implementation of NAFTA, which the peasants expected to exacerbate their poverty. Fr. Riebe believes that when the Mexican government was subsequently unable to attribute the armed insurgency to external influences such as Communist Cuba or Guatemalan guerrillas, it began a witch hunt among the clergy.

A Priest's Personal Perspective on Chiapas (U)

(U) Seemingly an unlikely advocate for the underprivileged of Chiapas, California-born Fr. Riebe, in contrast to the diminutive 71-year-old Archbishop Ruiz, is rather portly and appears to be in his mid-40's. He spent 4 years as a priest in Santa Monica before going to Mexico. After 2 years in Temejapa, he became the priest for some 22,000 parishioners in Yajalon, where he served for 19 years before being deported.

(U) Life in Yajalon for the indigenous peoples, as described by Fr. Riebe, is one of toiling for the equivalent of $1.50 per day on coffee plantations and cattle ranches owned by a few wealthy land barons; being victimized by a corrupt health system and an ineffective education system; and seeking escape in alcohol. In a society where the oligarchs not only control all the good land but also run the judicial and police systems and fill the mayoral and gubernatorial positions, Riebe's parishioners were ripe for political mobilization, but since the indigenous peoples never come to a decision without due consideration and prayer followed by still more thought, it took a few years for them to mobilize. They flocked to the Socialist Workers' Party when it orga-

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Fr. Riebe's Account of his Arrest (U)

(U) On 22 June 1995, the day of their arrest, Rodolfo Itzal, a Spanish priest with a church in Sabanilla, had been at Fr. Riebe's home and had left with some children from the parish in a Ford pickup truck belonging to the church. Soon after, Mexican police overtook the truck and pulled Itzal from it, apparently on trumped-up charges concerning ownership of the vehicle. Fr. Riebe was contacted and asked to go to the scene with the documentation on the truck. When he arrived, around 3 o'clock in the afternoon, he was detained by plainclothes police. State judicial police (PJE), whom Riebe characterizes as "thugs," subsequently arrived with machine guns. Refusing to explain the charges against the priests, the PJE placed Riebe blindfolded, on his knees in the back of a flatbed truck and put Itzal in the cab and drove them to the state capital, Tuxtla Gutierrez, from where they were flown to Mexico City and then deported to Miami. This treatment stands in stark contrast to the former Chiapas governor's description of the government-church relationship as one of openness, harmony, dialogue, and respect. Although the priests were not beaten, Riebe confessed that he was very tense and fearful throughout the ordeal. In retrospect, he noted with a laugh, the only thought that had gone through his mind was, "Why Miami?"

## Riebe's Forecast for Chiapas (U)

(U) Discounting allegations that outside influence, whether from Central American revolutionaries, drug traffickers, or the Church, is responsible for the Zapatista movement, Fr. Riebe expresses the belief that the Indian population of Chiapas has accepted responsibility for its own future, has become very good at organizing politically, and is quite capable of carrying on its own rebellion. The time to act has come, he says; the indigenous peoples are challenging the old way of doing business and there is hope that their situation will improve.

Epilogue (U)

(C) Although Fr. Riebe was not told prior to his expulsion from Mexico the nature of the charges against him, nor did he in his comments during LASA-95 allude to any illegal activities, the Mexican Secretary of the Interior told the U.S. ambassador to Mexico on 27 September (just 2 days prior to Riebe's appearance at the LASA conference) that the Mexican Government has specific complaints against Riebe of incitement to seize land and threats to parishioners who refused to support such seizures. Meanwhile, Paul Nadolny, another American priest, was refused re-entry to Mexico in September after a month's absence from Chiapas. The Mexican Government, which claims to have incontrovertible evidence of illegal activity by Nadolny, opted not to execute an arrest warrant against him but instead to refuse to allow him back once he had left.

Conclusion (U)

(S-CCO) The future of the Chiapas peace process is uncertain; progress to date shows that the pace will be slow and painstaking. Moreover, whether or not Fr. Riebe and his colleagues exceeded the bounds of their pastoral duties, or how the Church's activism in Chiapas will affect church-state relations is difficult to determine. What is clear is that opportunities like LASA-95

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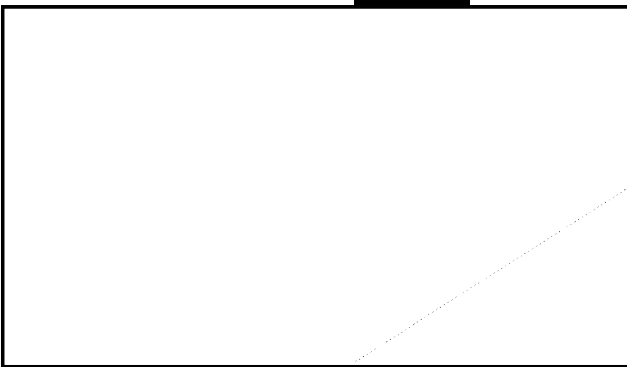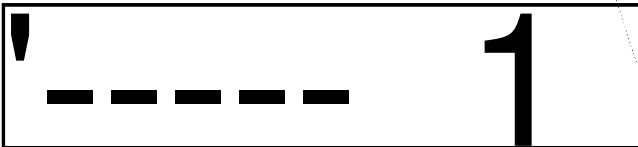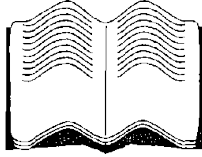
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Book Reviews (U)

James Miles. *The Legacy of Tiananmen; China in Disarray.*
Ann Arbor: The University of Michigan Press, 1996. 379 pp.

reviewed by[   ]   P.L. 86-36

(U) The legacy of Tiananmen continues to provoke debates and prompt further analysis about China's current status and its future development. *The Legacy of Tiananmen; China in Disarray* by James Miles is an excellent addition to these debates and adds to our understanding of contemporary China. In this book, James Miles looks at factors contributing to instability in China, while keeping the lessons of Tiananmen in mind. The Oxford University-trained China-watcher believes that the events in 1989 offered the world a unique opportunity to look at some crucial aspects of China that had long been only dimly perceived. The event briefly illuminated the mood of the public, the workings of one of the most secretive political parties in the world, and the personalities of Chinese leaders before the veil once again came down. Taking the revelations from the Tiananmen incident as a point of departure, Miles examines the different aspects of China and its society. He identifies and describes the political and social tensions underlying and engendered by China's economic boom and contends that what happened so unexpectedly in 1989 should alert us to the fact that an economic boom does not necessarily bring stability in

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(U) Miles calls China today as volatile as it was during the June 1989 turmoil

its wake. Although he concentrates largely on domestic issues, Miles also discusses Beijing's efforts to resolve these problems that will have a crucial bearing on China's future and its relations with the outside world.

(U) Miles' analysis has led him to believe that China is now facing the most uncertain period of its political life since the Communists came to power. He joins others before him in stating that the death of Deng Xiaoping will mark the end of a leadership system dominated by veteran revolutionaries whose authority rests on careers dating from well before the Communist takeover in 1949. Those fighting for power after Deng's death are on the whole, younger men who played little, if any, role in the civil war that brought the Communists to power. Deng's strength, like Mao Zedong's, has depended to a considerable extent on his credibility with the military, built up during his years as a commander and commissar. Deng's designated civilian successors, however, do not have any combat experience and will not enjoy similar support.

(U) Drawing on insights from historical analysis, Miles regards the 1989 incident as one of the periodic upheavals in which China struggled to find a modern identity and come to grips with the outside world. As a result of his own examination, Miles believes that the

(U) Miles concludes that China today remains at least as unpredictable and volatile as it was at the outset of the Tiananmen Square protests. Deng's economic reform and development policies have aggravated social tensions and weakened the party's grip; the gap between rich and poor and between rural and urban is widening; and the people, including public officials, have lost faith in the party's future, especially in its ability to meet their basic needs. Miles believes that China in the late 1990s is a country deeply unsure of where it is going, because Chinese politicians and the public are already asking themselves whether China is emerging as a new economic superpower with global influence, or if it is heading toward the chaos they so much fear. Miles argues that chaos is more than likely, given the existence of factors contributing to instability, and as many such chaotic situations have occurred in China's history. He, in short, judges that if chaos ever results in the collapse of the Chinese authority, as it did briefly in 1989, the poor and the discontented would be among the first to take to the streets.

(U) It is not surprising that Miles arrives at a pessimistic conclusion about China and its future development, given the fact that he focuses his attention only on what he considers as factors contributing to instability and chaos in China. He basically got what he looked for and did an outstanding job putting together a fairly well-documented, theoretically plausible, and thought-provoking book about contemporary China. No one can ignore or dispute the destabilizing factors resulted by Deng Xiaoping's economic policy. He, however, purposely ignored the positive aspects and consequences of Deng's policy, and failed to understand the dynamics of Chinese politics and China's overall socioeconomic development. China today is nowhere close to where China was at the onset of the 1989 Tiananmen protests; nor will it in the near future likely resemble the situation that culminated the tragedy. On the whole, China today is more democratic than any time in its history; and economic inequity and regional disparity aside, the Chinese people are economically far better off today than they were before. The current leadership also possesses an effective mechanism of control backed by the military and the public security forces. An equally strong and credible case can be made in favor of China's ability to manage these factors and avoid chaos while continuing its current economic transformation. While positive changes in China are at a slow and evolutionary pace, they are increasingly evident and likely will appear more frequently, especially at the local levels, if stability continues in China.

anti-government protests in 1989 arose out of a conflict between the fast-growing aspiration of the urban population and the conservatism of an aging and inward-looking leadership, which in many aspects still operates like the old imperial court. The demonstrators in Tiananmen Square wanted an end to corruption, a press that was free to report on real problems, and a government that listened and responded to concerns about everything from inflation to political representation. Miles concludes that Deng's economic boom has done little to address these concerns, thus leaving unresolved the tensions and problems that likely will trigger chaos.
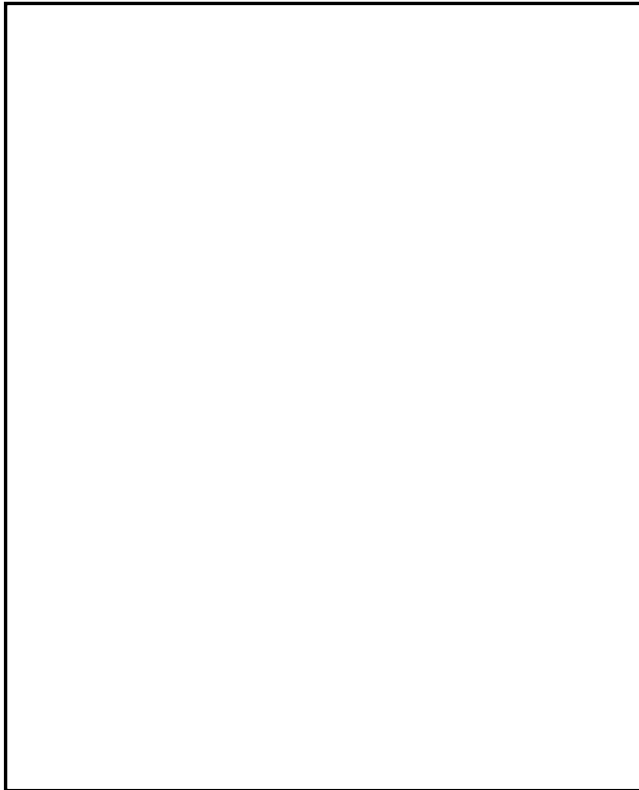
(U) Furthermore, Miles contends that cracks have begun to appear in China's political structure which will open the Pandora's box of rivalry, hatred, vengefulness, and a myriad other destructive emotions just as in some of the former Communist countries of Eastern Europe and parts of the former Soviet Union. He believes that factional rivalries, ideological rifts, personal enmities, and other related problems are already apparent in the Chinese Communist Party (CCP). Public contempt for the party and cynicism about its policies are pervasive; corruption is rampant and uncontrolled and uncontrollable economic explosions are already occurring. Miles further believes that these problems will multiply and intensify, and that China will not have such leaders as Mao Zedong or Deng Xiaoping who can lead it out of chaos.

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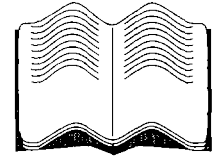
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(U) Deng Xiaoping's policies have weakened party's grip.

(U) James Miles wrote this book after living and working in Beijing as a journalist, mainly with the BBC, for eight years. He completed his work while on a fellowship at the University of Michigan. He is currently the BBC's Hong Kong correspondent. He began his journalistic career in China shortly after he received his education in Chinese studies from Oxford University in England.

(S-CCO) _____ is a participant in the Senior Technical Development Program (STDP), currently undergoing intensive training in the language and reporting fields. He was the _____ prior to his selection into the STDP Program. His other agency experiences include language processing and reporting. He is a Master in Intelligence Analysis and a Master in Language in the DDO Technical Track Program. His formal education includes a B.A. in history from Vanderbilt University, and a Ph.D. in political science and Asian studies from the University of Notre Dame.

(U) Miles acquired his information for this interesting book from both Chinese and English books and newspapers published in China, Hong Kong and the West. Other sources include his interviews with Chinese officials and ordinary citizens, as well as his observations made during his eight years in China while working as a journalist, mostly with the BBC. However, it is impossible to verify the credibility of some of the people interviewed by Miles, since their true identities are not revealed; nor is it possible to establish with confidence the reliability of the information divulged by his oral sources. Nonetheless, this book is well-written, highly readable, and thought-provoking. It is, in short, a valuable contribution to current China research and to the understanding of contemporary China, and I recommend that the NSA library acquire it.

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Robert M. Clark. Intelligence Analysis: Estimation and Prediction
Baltimore: American Literary Press, 1996. 340 pp.

Reviewed by Bill Nolte

(U) What do you get when you cross an engineer with a lawyer? Well, you may get one heck of an information gatherer, but you might want to be forewarned about the delivery technique.

(U) We have become accustomed to intelligence history becoming a matter of public record; we should not be surprised to see more and more about technique and process. Nor should we be either surprised or concerned to see our techniques and processes demystified. If what we are about is the collection of information on demand, the processing of that information in some way, and its delivery to the customer making the demand, then we operate in a process very much like those used by stockbrokers, detectives, and medical diagnosticians, among others.

(U) Robert Clark, a former CIA analyst, has attempted to reduce the analytic elements of the intelligence process into something of a text, with emphasis on the analysis of scientific and technical intelligence. As such, it may represent a useful primer for those who have found themselves thrown into the process in some form or another with little opportunity to step back and look at the process itself.

(U) But this is a textbook, and someone should have told the author that the publishing gods freed detextbook authors of the requirement to be pedantic and boring some time ago. Or maybe some authors simply freed themselves, the great Yale historian Donald Kagan, to cite an example.

(U) At its worst, Clark's book reminds the reader of the poetry text skewered by Robin Williams' character in *Dead Poets Society*. Audiences will remember the scene where he had his charges rip from the book its first chapter, the one with the x, y graph to be used for plotting a poem's greatness. *Intelligence Analysis: Esti-*

mation and Prediction could only have improved on that graph by making it three-dimensional, adding a predictive coordinate.

(U) "At its worst," implies the existence of some elements that avoid that fate. The book includes a series of Analysis Principles and Case Studies that give it some measure of life. The Principles include everything from Occam's Razor to Newton's First Law, which the author applies to organizations as well as physical bodies. Some of these are puzzling: if the focus of the book is on analysts doing scientific and technical work, a paragraph or two on "S" curves would seem unnecessary; it is the larger, non-S&T-analytic community that could find it beneficial to have their tools dipped in some methodological rigor.

(U) The Case Studies are intelligently selected, described, and applied, deriving from both the intelligence experience (Pearl Harbor) and external, industrial (the development of DOS) experiences. Purists and specialists will probably go crazy at the shorthand description of some complex events, but such imprecision is almost a relief from the expository portions of the book.

(U) Looking for a primer on the analytic process? This could be your book. Looking for "a good read?" Probably not. Finally, the publishing gods, even the minor deities associated with smaller presses, should be ashamed to permit the publication of a text of this sort without a table of contents.

—(FOUO) Mr. Nolte, DDO Senior Intelligence Advi-

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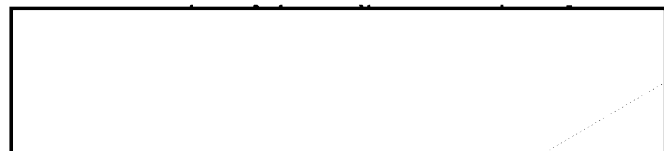
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(U) Technical articles are preferred over those relating to management, shorter over longer (under 3,500 words). Emphasis should be on improving NSA's technical performance; articles should be aimed at explaining developments in one's career field to those outside it. Readers are invited to contribute conference reports and reviews of books, articles, software, and hardware that relate to our missions or to any of our disciplines. Editorials are also welcome, as is humor. Submissions may be published anonymously, but the identity of the author must be known to the editor.

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(FOUO) Send a soft copy via email to cryplog@nsa, or send a hard copy accompanied by a labeled diskette to the editor at P02 in 2C099, Ops. 1.

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- Do not type your article in capital letters.

- Label all diskettes, identifying hardware (operating system: DOS, UNIX), density and type of word processor used, filenames, your name, organization, building, and phone number.

- FrameMaker format is preferred; ASCII text is also fine. (FrameMaker users: while we welcome graphics, please include them in the file as separate objects rather than in Anchored Frames as these frames are nearly impossible to reformat to our standard.) The editor will be happy to e-mail a CRYPTOLOG template on request. Another option is to use J33's document conversion service (CLEANEX); instructions for e-mailing files for conversion can be found at http://www.j33.j.nsa/q6/q623/cleanex/clean.html.