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Doing Business Smarter: A Proposal for Consolidating NSA's Analysis and Reporting of Foreign Spaceborne Reconnaissance

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(U) A clear, cohesive definition of counterintelligence (CI) has proven elusive for the United States government. George F. Jelen, director of Operations Security at NSA, argues this confusion stems largely from competing senses in which the term counterintelligence *is used. In one sense,* counterintelligence *is restricted to ". . . those activities aimed at identifying and neutralizing . . ." the intelligence collection efforts of an adversary. On the other hand, a broader sense of* counterintelligence *includes ". . . the full range of all endeavors aimed at countering the effects of an adversary's intelligence efforts."*[1] *Jelen also describes how the intelligence community, in an effort to bridge the gaps between these competing viewpoints, developed the idea of* multidisciplinary counterintelligence*:*

> . . . the examination of the capabilities of all hostile intelligence collection systems in an integrated, multi-source fashion to define the magnitude [and] scope of the hostile intelligence threat to the United States and its national interests. It also includes the assessment of the vulnerability of specific targets to that threat.[2]

This broader sense of counterintelligence, encompassing the full range of defensive intelligence disciplines as well as their interactions and applications, forms the basis for the present proposal.

~~(S-CCO)~~ *Various offices scattered throughout NSA's Operations Directorate (DDO) perform a counterintelligence function, most notably in Operations Groups A, B, P, W, and Z. Additionally, Agency elements outside DDO, such as Operations Groups M and X, contribute to the Agency's overall counterintelligence effort. By scattering NSA's counterintelligence roles throughout diverse organizations, the Agency has imposed upon itself a burden which hinders timely and comprehensive CI analysis and reporting.*

~~(S-CCO)~~ *Consolidation of the Agency's scattered counterintelligence efforts would allow for improvements in the way NSA's CI customers' information and analysis needs are met. Not only would consolidation improve the timeliness and comprehensiveness of analysis and reporting, but also a single Agency CI focal point would be capable of presenting more in-depth and insightful analyses. A greater understanding of the threat, in turn, allows for increased protection from hostile foreign activities and improves the overall security posture of present and future activities across the entire spectrum of U.S. government interests. Sun Tzu, writing about 475 B.C., pointed out the importance of both*

intelligence and counter-intelligence, expressed as an awareness of what an enemy might seek to know:

> If I am able to determine the enemy's dispositions while at the same time I conceal my own then I can concentrate and he must divide. And if I concentrate while he divides, I can use my entire strength to attack a fraction of his. . . . The enemy must not know where I intend to give battle. For if he does not know where I intend to give battle he must prepare in a great many places. And when he prepares in a great many places, those I have to fight in any one place will be few. . . .
>
> [D]etermine the enemy's plans and you will know which strategy will be successful and which will not.
>
> Agitate him and ascertain the pattern of his movement.
>
> Determine his dispositions and so ascertain the field of battle.
>
> Probe him and learn where his strength is abundant and where deficient.
>
> The ultimate in disposing one's troops is to be without ascertainable shape. Then the most penetrating spies cannot pry in nor can the wise lay plans against you.[3]

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~~(TSC)~~ *Viewed in the broad context of multidisciplinary counterintelligence, SIGINT contributions from NSA include* [redacted] *These efforts combine to present a greater picture of what real or potential enemies of the United States might seek to know. As Sun Tzu pointed out, foreknowledge of the enemy's efforts increases one's own ability to anticipate events and protect activities. One of NSA's SIGINT counterintelligence efforts, the exploitation of signals associated with foreign spaceborne reconnaissance activity, provides valuable input to our understanding of the strategic intelligence sought by foreign powers and is often overlooked. This paper will focus on these efforts to illustrate and propose a means by which the Agency might better serve both internal and external customers interested in this aspect of foreign intelligence collection.*

CHANGES IN THE INTERNATIONAL ENVIRONMENT

(U) With the collapse of the Soviet Union, the United States finds itself in the midst of a crisis. Having spent almost fifty years watching and preparing to fight the only other existing superpower, America must now seek to understand a world full of new, previously overlooked threats. The Soviet collapse shifted international affairs attention from the relative safety and comfort of a well-understood bipolar world. Instead of the anticipated unipolar *Pax Americana*, the United States finds itself challenged on numerous fronts by problems previously ignored or understood only in the larger bipolar context. The intelligence community, like the rest of American government and society, must re-examine the nature of the evolving international system in order to reach an

accommodation with events. Foregoing such an accommodation condemns the United States to a seemingly endless routine of lurching from crisis to crisis.

(C) Along with the need to come to an understanding on the changing international system, the intelligence community must also learn to anticipate and adapt to a more dynamic international environment. As the nature of relations between states changes, so too will the threats faced by the United States. To deal with these ever-changing threats to national security and national interests, the intelligence community has been called on to move forcefully toward better anticipatory analysis. National Security Directive (NSD) 47, signed by President George Bush on 5 October 1990, puts the onus of adaptation squarely on the intelligence community's shoulders:

> By the end of the 1990s, we will probably see a markedly different threat environment. This dynamic situation requires thoughtful and systematic CI and SCM [Security Countermeasures] planning, resource commitment, and imaginative implementation. We must enhance our ability to anticipate the scope and pace of changing intelligence threats and to respond with successful operational initiatives.[5]

(S-CCO) For NSA to fully participate in and contribute to this effort, the separation and division of effort within the Agency must be reexamined and, where indicated, adjusted to better meet the demands imposed by a dynamic threat environment, a new international order, and increasing budgetary and resource constraints. In short, the Agency must strive to produce intelligence in the most efficient and effective manner possible. [redacted] writing in *Cryptologic Quarterly*, argues the Agency will of necessity undergo a paradigm shift: an almost complete rethinking and adjustment of perspective to better cope with external obstacles while continuing to serve the political and military needs of the Agency's customer base. NSA will be required to shift its emphasis toward new targets while maintaining continuity with the old.[6]

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(S-CCO) To meet the competing requirements posed by world events and domestic considerations, NSA will find itself striving to anticipate policy-makers' information needs and world events more than ever before. Even if the international system did not produce a myriad of new challenges, budgetary and resource scarcity, along with the prospect of budget and resource reductions continuing, will force NSA to become better at predicting the future if it is to maintain present levels of quality intelligence production. Successful anticipation rests on an understanding of the number, direction, and nature of threats which may at some point face the United States. Knowing what information existing or potential enemies are collecting against the U.S. is one key indicator of the possible direction, timing, and scope of threats. Successful anticipation, in turn, allows for more efficient resource allocation, better protection of American activities and interests, and a chance to significantly reduce or eliminate the susceptibility to damaging surprises.

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(S-CCO) Exploitation of [redacted] is one vital piece in the puzzle facing American planners, allowing analysts and decision-makers a clear understanding of the strategic interests of other states. Nightly news broadcasts during the Persian Gulf War highlighted the value of overhead reconnaissance both for planning

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and assessment purposes. Translating this activity from airborne collection assets to spaceborne assets does not diminish its importance; rather, it further serves to underscore our vulnerability to overhead reconnaissance. These lessons, assuredly, were not lost on countries around the world seeking new, more efficient means of collecting strategic intelligence in areas denied to more terrestrial collection resources.

other countries are actively pursuing, and attaining, that capability. Recent international events should demonstrate the dynamic and sometimes volatile nature of international friendships, strongly suggesting America cannot wisely count on the guaranteed perpetual friendship or neutrality of other states which may develop a spaceborne reconnaissance capability in the future.

FOREIGN SPACEBORNE RECONNAISSANCE

(U) Spaceborne reconnaissance, often referred to as national technical means of intelligence collection, serves a number of functions. The most frequently noted function is the monitoring of strategic weapons systems as part of the arms treaty verification process. The United States, the Soviet Union, and now Russia, have depended on spaceborne assets to maintain cognizance of weapons of mass destruction and of the means to deliver those weapons. Such reconnaissance has formed the backbone of verifying treaty compliance since the first Strategic Arms Limitation Agreement between the U.S. and USSR. Without this capability, SALT I and subsequent treaties would have collapsed as meaningless, unenforceable agreements. The verification aspect of these treaties, provided by the national technical means of the U.S. and USSR, is arguably the single element guaranteeing the successful negotiation of each subsequent treaty. There is no reason to expect the importance of national technical means of arms control compliance verification will diminish in the future, particularly given the uncertainty raised by the division of the former Soviet arsenal between Russia, Kazakhstan, and Ukraine. Indeed, with the breakup of the monolithic Soviet arsenal and the apparent difficulties encountered in multilateral efforts to dismantle former Soviet delivery systems outside Russia, both Russia and the United States may find it in their interests to increase overhead arms control monitoring.

~~(S)~~ Beyond arms control monitoring, spaceborne reconnaissance assets provide a window through which strategic planners can watch for indications of hostile military activity. The warning role afforded by these assets is critical for advanced preparation and successful countermeasures. While more conventional means of military monitoring, such as human intelligence and communications intelligence, can be largely defeated by careful operational and communications security activities, spaceborne reconnaissance assets are less likely to miss key threat indicators. The degree of spaceborne warning success will, however, depend on the technical capabilities and extent of the deployed system.

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~~(TSC)~~ Monitoring military and economic targets, as well as more general environmental targets such as natural disasters, is possible using several distinct spaceborne platforms. The most common system is the photoreconnaissance or imagery system. The United States, operate systems at various degrees of technical and operational advancement. Fully operational, or nearly operational, imagery systems operated by foreign states include

- near real-time Imaging Satellites (IMSATs), different versions of which contain encrypted and unencrypted telemetry packages; Second Generation High Resolution Photoreconnaissance Satellites (HIRES-2); Medium Resolution Photoreconnaissance Satellites (MEDRES); E.O. 13526, section 1.4(c)
- a probably low-to-medium resolution photoreconnaissance satellite,
- an operational commercial imagery satellite system, as well as a military and
- a probably low-to-medium resolution photoreconnaissance satellite, undergoing initial deployment and testing by

~~(TSC)~~ Radar is also used in spaceborne reconnaissance efforts. The USSR, and in turn Russia, have operated a synthetic aperture radar satellite called

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These systems could become particularly worrisome to the United States in the future, largely because of the radar's ability to penetrate clouds and darkness.

~~(TSC)~~ A third avenue in which at least one foreign state has been active in spaceborne reconnaissance has been the ELINT arena.

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Other ELINT systems include an ELINT Ocean Reconnaissance Satellite, used initially for over-the-horizon naval weapons targeting, and a Radar Ocean Reconnaissance Satellite.

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Interestingly, footage filmed by Mir cosmonauts of the smoke produced by oil wells set afire by Iraqi troops in Kuwait was broadcast over network television at the height of the Gulf War.

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THE CHALLENGE: NON-RUSSIA

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OVERVIEW OF CURRENT NSA EFFORTS E.O. 13526, section 1.4(c)

~~(TSC)~~ Given the potential for [redacted] falling into the hands of states or organizations hostile to the United States through uncontrolled sale of imagery, it behooves the intelligence community to maintain a current awareness not only of attempts to complete imagery sales but also of the current imagery operations of foreign satellite systems. To ignore the possibility is to shut the door on an excellent indicator of foreign intelligence interest. A simple awareness of American facilities or territory imaged by operating systems significantly increases the ability to detect undesired intelligence interest, or breeches in our own security, at an early stage.

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~~(S-CCO)~~ The need for vigilance against foreign intelligence threats as noted in NSD-47 is clear. The emphasis placed on counterintelligence activities reiterates the importance decision-makers attach to protecting American national and security interests from hostile intelligence exploitation. National technical means of intelligence collection, including spaceborne imagery, radar, and ELINT, become, in turn, an area which should receive considerable attention.

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~~(S CCO)~~ One previous proposal to create an Agency counterintelligence center was geared to boost intelligence production efforts while forging a closer working relationship with other interested government agencies. This effort failed, probably because of opposition from B Group.[25] Similar efforts to create an Agency counterintelligence center may suffer the same fate, regardless of national requirements. Rather than establish a new, larger organization likely to be targeted in bureaucratic wrangling, the Agency might best meet the CI challenge ahead by establishing a CI staff with responsibilities to coordinate widespread Agency efforts.

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would necessarily function with representation from Operations Directorate elements presently involved in some aspect of the target. Regardless of the staff's specific internal organization, representatives from Groups A, B, and W are critical for the staff's success. Failure to effectively combine the talents and perspectives represented by A, B, and W would prevent the staff from achieving the fusion of perspectives needed to fully understand the changing CI threat environment. Input, either in the form of integrees or through close daily working relationships, from other DDO and non-DDO elements is equally essential to meet the diverse interests and requests from customers throughout the government. If the counterintelligence effort represented by the staff is to truly demonstrate an Agency commitment to analysis of the foreign spaceborne reconnaissance threat in its broadest context, active involvement is necessary from cryptanalytic, policy and plans, security, and operations security elements throughout the Agency.

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At the same time, inclusion of data processing violates the principle of simplicity implicit in the conceptual construct. To maintain a more efficient effort to serve the broader needs of the Agency customers, while preventing the creation or replacement of yet another large organization, a staff with the responsibility for analytic and reporting fusion is indicated.

~~(S-CCO)~~ By establishing a single element capable of combining analytic assessments and perspectives throughout NSA, the Agency gives itself the opportunity to better meet the widely varied needs of both internal and external customers.

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This opportunity, in turn, increases the degree to which external customers perceive NSA responding to their particular needs. Not only could the Agency enhance customer perceptions about Agency responsiveness, but also reporting enhancements through greater timeliness would result in greater service to national intelligence requirements.[27]

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Effective exploitation rests on a bedrock of data access and processing, yet the initial effort to collect and understand satellite signals remains resource intensive.[23] A coordinating staff provides a single point for attack on new or newly acquired signals, while maintaining the perspective needed to effectively manage the broad, anticipatory effort required of a CI mission. E.O. 13526, section 1.4(c)

~~(TSC)~~ Beyond increased customer satisfaction and improved resource allocation, a coordinating staff would allow the Agency the luxury of bringing numerous analytic assets otherwise unavailable to bear on the target. Customer satisfaction, as one example, would be further enhanced by a reporting effort capable of

Fusing present A and W Group perspectives with collateral data can be effectively accomplished only by an element not limited by a narrow mission profile or burdened by the lack of resources.

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SURMOUNTABLE HURDLES

~~(S-CCO)~~ Bureaucratic difficulties can be expected. Virtually any time an organization as large and complex as NSA seeks to redefine itself or its component missions, it must first overcome bureaucratic inertia. By treating these diffculties as challenges to be met, rather than as barriers to progress, the Agency can proceed with its stated drive to increase efficiency and productivity despite growing budgetary and resource constraints. Beyond anticipated difficulties in deciding the location, authority, responsibilities, and subordination of a new staff, the Agency can expect a number of other issues to resolve. Foremost among these may be the various levels of security and compartmenting present in related elements of A, B, and W Groups. Agency-approved clearance and compartment levels should pose little additional problem, but the controls exercised by outside Agencies granting accesses must be anticipated and resolved early. A

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Since outside agencies control some accesses, negotiations for granting additional clearances should be undertaken early.

~~(S-CCO)~~ Automatic data processing (ADP) and computer support pose additional challenges requiring resolution for the creation of a smoothly functioning staff. Operations Groups A, B, and W presently operate a wide variety of computer systems, some of which have to be incorporated for use by the staff. The staff's charter of responsibilities, however, will guide the selection and allocation of appropriate computer and ADP systems and equipment.

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Only by recognizing and accepting the need to anticipate future threats to the United States, along with a determination to meet those threats early, can the Agency make the most efficient and effective use of limited resources.

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CONCLUSION

~~(S-CCO)~~ The future ability of the National Security Agency to intercept, analyze, and exploit signals associated with foreign spaceborne reconnaissance rests solely on the level of desire and commitment of effort afforded that task. Other United States government agencies have traditionally placed a close hold on U.S. spaceborne reconnaissance, hinting at the importance attached to this type of strategic intelligence. Press reports indicate the Central Intelligence Agency only recently withdrew its long-standing objection to the release of U.S. spaceborne imagery with a spatial ground resolution greater than thirty-three feet. Bowing to pressure from aerospace and electronics firms seeking to compete against foreign governments already providing such data, the CIA was forced to accept the conclusion that the data it sought to withhold out of fear that U.S. security interests would be compromised were already available.[34]

~~(S-CCO)~~ Further Agency efforts to exploit these data will be determined by the Agency's commitment to the goals outlined in NSD-47 and related directives. A strong desire to fully understand potential hostile intelligence collection threats, by whatever means, suggests we need to seriously consider consolidating NSA's widely scattered counterintelligence efforts.

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Notes

1. [redacted] "The Defensive Disciplines of Intelligence," *International Journal of Intelligence and Counterintelligence* 5, No. 4 (Winter 1991–1992), 382.

2. Unclassified extract from a classified report, as quoted in [redacted] 383.

3. Sun Tzu, *The Art of War* (translated by Samuel B. Griffith), (London: Oxford University Press, 1963), 98–100.

4. [redacted] Memorandum to the Deputy Director for Operations [NSA], 29 May 1992. ~~TOP SECRET UMBRA~~ extract.

5. National Security Directive 47, 5 October 1990, 1 ~~CONFIDENTIAL~~ extract.

6. [redacted] "Restructuring the U.S. SIGINT System for Tommorrow's World (U)," *Cryptologic Quarterly* 8, No 3 (Fall 1989): 114.

7. [redacted]

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8. (TSC) Operational folders maintained by NSA/A952.

9. (TSC) Operational folders maintained by NSA/A952.

10. (TSC) Joseph Verrilli, intelligence analyst at the National Security Agency, interview by author, 1 February 1993.

11. (TSC) Operational folders maintained by NSA/A952.

12. (TSC) Ibid.

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16. (TSC) Operational computer database maintained by NSA/A952.

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20. Yossi Melman, "Israel's Race Into Space: Spurred by the Gulf War, the Nation Pins Hopes on Orbiting Spies," *The Washington Post*, 17 May 1992, C4.

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24. National Security Agency, *Technical SIGINT Exploitation Group Directory*, 27 October 1991.

25. [redacted] Manager at the National Security Agency, interview by author, 25 October 1993.

26. [redacted] Manager at the National Security Agency, interview by author, 29 October 1993.

27. [redacted] NSA intelligence analyst assigned to the Director of Central Intelligence's Counterintelligence Center, interview by author, 26 October 1993.

28. [redacted] interview.

29. [redacted] interview.

30. [redacted] interview.

31. [redacted] interview.

32. [redacted] intelligence analyst at the National Security Agency, interview by author, 8 November 1993.

33. [redacted] interview.

34. Associated Press newswire, 12 November 1993.

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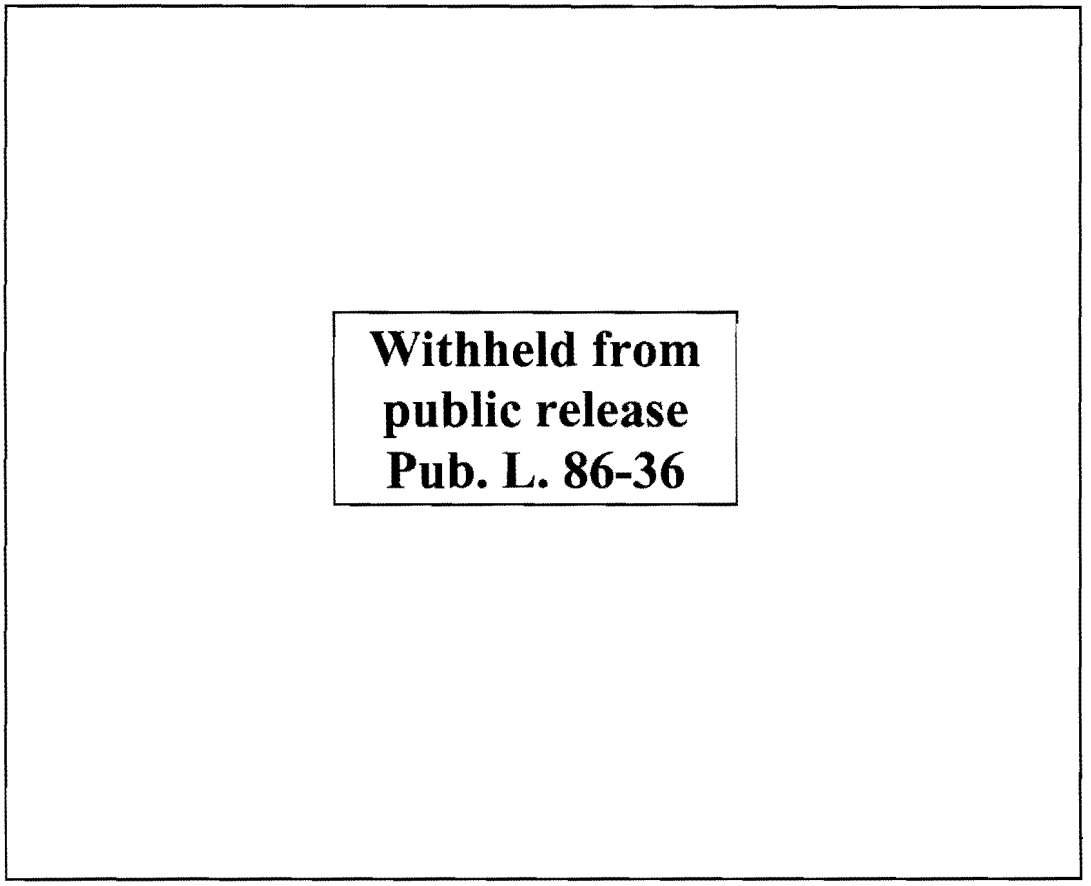

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