

AIR WAR COLLEGE

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COLLECTING TO WIN:
ISR FOR STRATEGIC EFFECT

by

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Biography

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Abstract

As the U.S. rebalances towards the Asia-Pacific, strategists and force planners will grapple with how to best pursue American policy objectives in the region. Financial constraints will limit their available means, placing additional importance on the creative use of existing resources. However, concepts rooted in years of counterinsurgency and counterterrorism operations—if unquestioningly transferred to the Asia-Pacific—risk becoming cognitive strictures that limit strategic imagination. This monograph aims to broaden joint force thinking on intelligence, surveillance, and reconnaissance (ISR). It begins by defining ISR and differentiating it from intelligence writ large. Next, borrowing from airpower theory, it explores the relationship between ISR and strategy, concluding that ISR is an astrategic activity that may bring about strategic effects in three fundamental ways—by *informing* strategy-making, by *enabling* necessary tactics, and by favorably *shaping* the operational environment. The paper then examines each ISR way against available historical evidence. Recommendations to improve the efficacy of ISR in the Asia-Pacific and beyond complete the essay. The project introduces several novel concepts, including ISR’s astrategic character, ISR’s three ways to cause strategic effect, ISR diplomacy, and ISR’s observer-effect.

Introduction

On the morning of April 1, 2001, a crippled U.S. Navy reconnaissance aircraft lumbered toward China's Hainan Island with 24 American souls aboard. Moments earlier, in international airspace above the South China Sea, the EP-3E Aries II—a turboprop-driven intelligence collection platform—improbably survived an accidental mid-air collision with an intercepting Chinese jet fighter plane.¹ According to survivor accounts, the Chinese naval pilot, Wang Wei, probably misjudged relative speed and distance while performing an aggressive aerial maneuver known as “thumping.” The Chinese F-8II, flying immediately beneath the EP-3, pitched up closely in front of the reconnaissance aircraft—too closely—sheering off the EP-3's nose and scattering a debris plume that the larger aircraft's engines ingested. The EP-3 fell approximately 10,000 feet while its pilot struggled to regain control of the machine. The Chinese naval pilot was less fortunate—his F-8 broke apart and plummeted into the waters below.²

The tactical miscue presented President George W. Bush's administration its first serious international test. For 11 days People's Republic of China (PRC) authorities detained the EP-3 crew and their aircraft, demanding an apology, reparations, and the cessation of U.S. reconnaissance flights along China's coastline. Rhetoric escalated and nationalistic emotions simmered in both Washington and Beijing. But, there was more to lose than gain by a prolonged stand-off and statesmen on both sides moved to defuse the situation. In relatively short order, U.S. leaders publicly expressed regret for Wang's fate and the Chinese repatriated both the EP-3 crew and, later, the plane itself.

The 2001 EP-3 incident momentarily focused the attention of U.S. policymakers and military strategists on both Sino-American relations and the subordinate role of U.S. airborne intelligence, surveillance, and reconnaissance (ISR) missions in the Asia-Pacific. What should

U.S. policy be toward Beijing? What strategy might best achieve American aims? Additionally, what role would ISR play? These salient questions had been asked before, but they figured prominently on the minds of the new U.S. administration's foreign policy heavyweights in the summer of 2001. However, the events of September 11 that year interrupted the formulation of any comprehensive U.S. policy toward China by diverting attention and resources elsewhere. Furthermore, extended post-9/11 operations in Afghanistan and Iraq refocused the American ISR enterprise—especially aerial ISR—almost exclusively on enabling counterinsurgency and counterterrorism efforts elsewhere in Asia.³

Questions regarding Sino-American relations, U.S. strategy, and the role of ISR activities remain pertinent today. While many grappled with these issues over the past decade, four developments suggest an open policy window now exists for both strategy formulation and long-term ISR force structure decisions. First, in late 2011 President Barack Obama's administration announced a U.S. "pivot" toward the Asia-Pacific, signaling American intent to intensify its role in that region.⁴ Then, on January 5, 2012, the president released official strategic planning guidance to the Defense Department that expanded on the shifted priorities: "Accordingly, while the U.S. military will continue to contribute to security globally, we will of necessity rebalance to the Asia-Pacific region."⁵ Exactly what the pivot means in concrete terms remains unclear. Readers of the guidance can find language that justifies a range of policies and strategies, from the confrontational to the cooperative. What is unequivocal, however, is that considerations regarding the Asia-Pacific will heavily influence forthcoming policy-making, strategy-building, and force planning.

Also inviting reassessments are the post-war drawdown of U.S. forces and the current era of pecuniary prudence. As recent combat operations conclude, "next war-itis" is no longer

taboo. New estimations of the threat environment and needed capabilities are not just tolerated, they are encouraged. Additionally, the long-term security challenges posed by a substantial national debt make cuts to defense spending politically feasible.⁶ Post-war periods are often characterized by smaller defense budgets, even more so when fiscal solvency dominates national discourse.

A fourth factor—the increasingly muscular behavior of a rising China and the wariness it causes among neighbors—imbues security discussions with a sense of urgency. As one recent example, in November 2013 the PRC unilaterally announced an air defense identification zone (ADIZ) over a portion of the East China Sea that overlaps with an existing Japanese ADIZ and includes airspace above the disputed island chain known as Senkaku in Tokyo and Diaoyu in Beijing.⁷ The Chinese promised unspecified defensive measures in response to uncoordinated flights through the ADIZ, and in the days following the declaration air components of the People’s Liberation Army (PLA)—along with their Japanese and South Korean counterparts—stepped up airborne surveillance and interceptions in the area. China’s latest irredentist assertion and martial actions increase the probability of a tactical-level miscalculation along its contested periphery that, in turn, risks stoking the region’s hyper-nationalistic predilections and drawing careless statesmen into open conflict. However, Senkaku, and the like, also create opportunities for large-minded leaders and clear-sighted strategists to manage conflict—ideally before it occurs—using various means of statecraft, including ISR.

Thesis

This monograph examines the ways of ISR in the context of the Asia-Pacific rebalance. It begins by defining relevant terms and differentiating ISR from intelligence writ large. Next,

borrowing from airpower theory, it explores the relationship between ISR and strategy, identifying three fundamental ways that ISR activities may cause strategic effect. The essay sketches each ISR way in some detail and surveys historical evidence to refine the concepts. The penultimate section recommends improvements to U.S. military doctrine and ISR employment in the Asia-Pacific. A summary concludes the paper. In the final analysis, ISR may cause strategic effects in three ways—by collecting to *inform* strategy-making; by collecting to *enable* the execution of strategy; and, by favorably *shaping* the operational environment directly. If this essay adds modestly to a more expansive and nuanced understanding of ISR, it will have succeeded.

Intelligence and ISR

Any examination of ISR must first begin with some circumscription of the concept. What is meant by ISR? There is no consensus definition of intelligence, so it should be unsurprising that ISR is also understood diversely.⁸ At its most superficial, ISR is the aggregation of intelligence, surveillance, and reconnaissance. More accurately, it is the re-association of functions which diverged accidentally in the U.S. military—and Air Force specifically—counterproductively ossifying over time into distinct organizations and cultures.⁹ Despite the presence of the term intelligence in the acronym ISR, the two concepts should not be mistaken as synonymous or interchangeable. ISR is something less than intelligence.

Intelligence is an umbrella term that can mean the *product* resulting from intelligence activities; those *activities*, including the collection, processing, integration, evaluation, analysis, and interpretation of information concerning foreign entities and potential battlespaces; or, the *organizations* that perform intelligence activities.¹⁰ As a product, written or otherwise,

intelligence improves understanding and informs decisions related to policy, strategy, campaigns, plans, or tactical action. As a set of inter-related and indivisible activities, intelligence culls and transmutes data into relevant information. And, intelligence organizations specialize in the artful conduct of intelligence functions for the purpose of maximizing the value of resultant products to their recipients.

ISR, on the other hand, is a narrower construct.¹¹ It is not a tangible or discreet *product*. Neither policy-makers nor commanders await receipt of ISR before making decisions. ISR does sometimes refer to an *organization*, although this is found mostly in the U.S. Air Force and can be misleading. Whereas certain ISR units—such as specific wings, groups, and squadrons—may be aptly named, Air Force staff directorates of ISR, the Air Force ISR Agency, and the ISR divisions within Air and Space Operations Centers, for example, are truly intelligence organizations with responsibilities beyond those limited to ISR. Most commonly, ISR is understood as an intelligence *activity*. U.S. joint doctrine describes it as “an activity that synchronizes and integrates the planning and operation of sensors, assets, and processing, exploitation, and dissemination (PED) systems in direct support of current and future operations.”¹² ISR is, in sum, the thoughtful collection, ancillary movement and processing, and initial analysis and reporting of intelligence data.

Each activity in the intelligence process is crucial, but two comprise the bulk of intelligence operations—collection and analysis.¹³ Collection is, arguably, the main activity of intelligence.¹⁴ It is the sensing of the surrounding world, the figurative act of peering into fog-enshrouded battlespace. Sherman Kent, one of the first American scholars of intelligence, called collection “the surveillance operation” by which something or someplace “is put under close and

systematic observation.”¹⁵ Collection is, in essence, the acquisition of information. It is surveillance. It is reconnaissance. It is—with some risk of undervaluing PED—ISR.

Meanwhile, analysis is the development of knowledge from collected information.¹⁶ It is the “thinking part of the intelligence process.”¹⁷ Kent thought of analysis as research, which he contended was the attempt to ascertain meaningful patterns from past and present observations.¹⁸ Joint doctrine describes it as the process by which intelligence is produced.¹⁹ While collection often accounts for the majority of effort, the analytical function is most central to intelligence. As one scholar averred, “Analysts and analysts alone create intelligence.”²⁰ And, while ISR may involve preliminary analytics, it should not be confused as being analysis.

Strategy and ISR

Strategic Intelligence and Astrategic ISR

Distinguishing ISR from intelligence is more than semantics. Doing so enables greater precision and deeper thinking on these topics, especially as they relate to strategy. While strategic intelligence exists, strategic ISR does not. Strategic intelligence, according to U.S. joint doctrine, is the intelligence “required for the formation of policy and military plans at the national and international levels.”²¹ It is, in essence, a *product* that informs strategy. As an *activity*, however, ISR is astrategic.

The arguments of two contemporary airpower theorists—Colin Gray and Robert Pape—help bring the relationship between ISR and strategy into relief. Gray, in his work *Exploring Strategy*, dispelled the myth of “strategic airpower.” In doing so, he also provided logical ammunition for slaying the notion of “strategic ISR.” Attempting to cleanse the sometimes confused discourse on airpower, Gray averred, “Specifically, the adjective strategic should not

be taken to imply any of the following: long-range; off-battlefield (narrowly interpreted as the area of engagement between armed forces); nuclear; important; or earmarked for, or regularly commanded by, a military organization that is labeled strategic.” Instead, “Military strategy,” Gray wrote, “is the art of employing armed force for the political purposes set by policy.”²² Tactics, therefore, refer to the use of the armed forces, while strategic describes the consequences of tactical employment.²³

Just as “there is no such beast as ‘strategic’ air power,” there is also no such monster as strategic ISR.²⁴ Regardless of whether the sensors and their platforms are spaceborne, cyberspaceborne, airborne, afloat, terrestrial, or submerged; whether they pry near or far; their abundance or rarity; their proximity to battle or association with U.S. Strategic Command, ISR capabilities and activities, by themselves, are astrategic. As with airpower, the employment of ISR is the realm of tactics. And, as with airpower, ISR has strategic effect only to the extent its outcomes pertain to strategy.

ISR’s astrategic character does not make it inconsequential. If employed thoughtfully, the opposite should almost always be true. Again, the study of airpower provides an instructive parallel argument and some useful historical examples. Robert Pape, in his book *Bombing to Win*—from which this paper partly draws its title—spotlights the strategic mechanism as the single most important criterion for classifying and evaluating coercive airpower.²⁵ Tactical variables such as timing, target sets, and the munitions used during bombing are far less relevant to strategic thinking about airstrikes than is the causal chain by which exploding ordinance translates into political success.²⁶

Pape’s admonishment regarding the strategic mechanism transcends his study of aerial coercion. Although astrategic, airpower—in all of its incarnations, not just bombing—can have

strategic effect. During the Battle of Britain, for instance, Royal Air Force fighter aircraft merged heroically with the *Luftwaffe* and denied Nazi Germany air superiority over the English Channel, thereby halting plans to invade the British Isles.²⁷ Later in World War II, American bomber aircraft dropped thousands of punishing incendiary devices—and two atomic ones—on Japanese cities, industry, and military targets, contributing directly to the Emperor’s decision to forestall additional destruction through surrender.²⁸ In the 1949 Berlin Airlift, perhaps the first strategic use of airpower in the Cold War, a cavalcade of cargo aircraft sustained much of Berlin until Soviet leaders quit their stranglehold on the city.²⁹ And, in the Korean War, the interdiction of Chinese and North Korean lines of communication by American fighter-bomber aircraft retarded the Communist advance and contributed to the cessation of open hostilities.³⁰ In these varied cases, airpower—wearing different masks—enabled strategic mechanisms. There is no airpower catechism. The strategic relevance of airpower is limited only by circumstance and imagination. How, then, might ISR—which is, in one form, another mask of airpower—also cause strategic effect?

ISR for Strategic Effect

To understand ISR’s relationship with strategy is to understand the consequences of ISR. Some frequently used ISR categories include traditional or non-traditional; manned or unmanned; armed or unarmed—none of which describe the activity’s purpose. Another common typology organizes ISR by collection discipline—e.g., signals intelligence, geospatial intelligence, etc.—which is also how sensors and specialized PED are procured and sustained. But, this conceptualization of ISR is more relevant to the comptroller than the strategist whose cynosure must be the strategic mechanism. Strategists are most interested in the consequences of activity, and ISR may induce strategic effects in three fundamental ways—by *informing*, by

enabling, and by *shaping*. When ISR informs strategy, it has a strategic effect. When ISR enables the tactics upon which a strategy hinges, it has a strategic effect. And, when the consequences of ISR employment contribute directly to the accomplishment of political aims, ISR has a strategic effect. What follows is a discussion of these ways and their mechanisms for strategic success.

Ways of ISR

ISR to *Inform* – Collection, Analysis, and Strategy

Collecting the information that appraises strategy is perhaps the most consequential role of ISR.³¹ It is also the most insatiable. *Informing* strategy involves the continuous gathering of data on myriad factors necessary to make sense of the operational environment, to frame and reframe the strategic problem, and to assess the effectiveness of a chosen strategic scheme. In U.S. military circles, it is the collection that feeds the Joint Intelligence Preparation of the Environment. It is the prerequisite for estimates, and for indications and warning. And, it aims to supply answers to the priority intelligence requirements. ISR to inform strategy is, in short, the collection that supplies grist for analysts to mill strategic intelligence.

In this category, analysis is the tissue that connects collection and strategy. As John G. Heidenrich wrote in his commentary on strategic intelligence, “Without the insights of deep expertise—insights based on detailed knowledge of obstacles and enemies and friends in a foreign area—a strategy is not much more than an abstract theory, potentially even a flight of fancy.”³² The better the ISR, the better the strategic intelligence. And, as Heidenrich concluded, “The better the strategic intelligence, the better the strategy.”³³

ISR to inform strategy can produce momentous—even spectacular—results. The examples punctuate history. Collection derived from U-2 penetrations of Soviet airspace in the 1950s and 1960s—and later, imagery taken from CORONA satellites—helped disprove the perceived Cold War bomber and missile gaps and alter related American policies and strategy.³⁴ ISR overflights of Cuba in 1962 noted the significant increase in Soviet arms deliveries and later confirmed Moscow’s intended proliferation of ballistic missiles, supplying the evidence for President John Kennedy to confront Soviet Premier Nikita Khrushchev.³⁵ In 1973, collection over the Sinai Peninsula by Soviet MiG-25 reconnaissance aircraft and Kosmos imagery satellites determined Israeli force dispositions, informing Egyptian President Anwar al Sadat’s decision to initiate, and later, to terminate the Yom Kippur War.³⁶ Collected evidence of regime malfeasance precipitated U.S. interventions in Libya and Panama during the 1980s.³⁷ And, heavy scrutiny of North Korean and Iranian nuclear ambitions has informed U.S. policy for decades. The collection that informs strategy can change the course of international affairs.³⁸ Conversely, without collection, analysis is impotent and strategy is blind.

ISR to *Enable* – Collection, Tactics, and Strategy

The second way that collection may produce strategic effects is by *enabling* the employment of the armed forces that pursue objectives set by policy. This is the realm of tactical intelligence, threat warning, and combat information. It involves the acquisition of data necessary for maneuver and targeting; and, it is the kind of ISR with which military tacticians are naturally most familiar. It aims to precisely answer the granular questions that pervade the battlespace: What is on the other side of the hill? Where is the missile engagement zone? What cyber security software does the device run? How thick is the bunker’s concrete? The analysis is typically more straightforward and immediate than that required for strategic intelligence. In

this category of collection, tactics is the bridge between ISR and strategy. The better the ISR, the better the tactical intelligence. And, the better the tactical intelligence, the more brilliant the tactics upon which strategic success builds.

The ISR that enables tactics enhances military effectiveness. It can make good tactics great. It can even prove decisive.³⁹ At the 1914 Battle of Tannenberg, for example, *Deutsches Heer* radio intercepts made possible the *kesselschlacht* that annihilated Russia's Second Army and culminated the Tsar's strategic offensive in World War I.⁴⁰ During the Second World War, ULTRA collection of Japanese communications set the stage for U.S. victories at Midway, Bismark Sea, Wewak, and Rabaul, turning the Pacific's operational tide in America's favor.⁴¹ Exhaustive collection efforts helped steer U.S. target selection and bomb damage assessment—with varying success—in the Allied Combined Bomber Offensive, Persian Gulf War, Operation Allied Force, and multiple conflicts in between.⁴² In 2011, ISR and tightly-coupled sensor-shooter capabilities helped protect civilians and tip the operational balance that toppled Libyan President Muammar Gaddafi's regime. And, currently in Afghanistan, ISR overwatch—often dedicated and sometimes armed—provides coalition ground units life-saving local awareness during counterinsurgency and counterterrorism operations.⁴³ The collection that enhances tactics is central to military action. It is not the singular purpose of ISR, but it does—especially in war—present a demanding imperative for collection resources. Without collection, tactics is aimless; and, without effective tactics, strategy is toothless.

ISR to *Shape* – ISR Diplomacy and the Observer-Effect

The final way that collection creates strategic effects is by *shaping* the operational environment directly. Although probably the least examined function of ISR, it deserves a prominent position in the strategist's arsenal. Shaping occurs mostly through two methods—ISR

diplomacy and the observer-effect phenomenon. In the latter, the known presence of sensors modifies the behavior of the observed. Through ISR diplomacy, international collaboration may draw strategic ends—or vital proximate objectives—closer. In both cases, shaping provides another plane upon which strategists must consider ISR.

ISR diplomacy describes negotiations between states that are facilitated chiefly by collection-related cooperation.⁴⁴ While the sensitive nature of collection methods and means often limits collaboration, sometimes ISR is uniquely suited to influence international politics. The primary instrument of ISR diplomacy is information-sharing—the release of collected information among partners. Its purpose is international co-optation. ISR diplomacy’s ends vary, but they are normally strategic—given the nature of the interstate relationship—and consist of desired outcomes that provide continuing advantage for all involved, such as shared understanding and mutual commitment.⁴⁵

Four examples demonstrate the utility of ISR diplomacy and further refine the concept. In October 1962, as the Cuban Missile Crisis lurched toward the nuclear brink, Ambassador Adlai Stevenson exposed Soviet deceit in a diplomatic *coup de grâce* before the United Nations, releasing imagery collected from the U-2 and seizing the moral high-ground in the court of international opinion.⁴⁶ Between December 1962 and January 1963, the U.S. conducted six U-2 overflights of the Sino-Indian border following Indian Prime Minister Jawaharlal Nehru’s request for military aid in the wake of Communist China’s overwhelming attacks on Indian frontier forces.⁴⁷ The imagery informed both U.S. and Indian policymakers. The cooperation also drew the U.S. and non-aligned India closer together—albeit temporarily—and paved the way for basing agreements in India that promised to extend the reach of U.S. ISR aircraft collecting on the Soviet Union.⁴⁸ Finally, in 1990, then-Secretary of Defense Richard Cheney

shared imagery of Iraqi formations near the Saudi Arabian border to convince King Fahd ibn Abdul Faziz to accept American troops in his kingdom.⁴⁹

In addition to ISR diplomacy's salutary effect, collection's observer-effect can also shape strategic conditions. The phenomenon originates in the scholarship of physics and sociology, and occurs when the introduction of observation instruments alters a scrutinized system.⁵⁰ Human subjects that know they are watched often behave differently than they otherwise would. That the known presence of ISR can elicit deception is not the point.⁵¹ Deceit is mostly the analyst's concern. At issue, rather, is how the observer-effect might be used purposefully by the strategist.

Overt ISR can have a positive or negative effect on a subject's behavior. Beginning with the latter, a negative observer-effect—the omission of activity—belongs alongside the idea of deterrence. Deterrence, according to the scholar Thomas Schelling, is the discouragement of action through fear of consequences.⁵² It is, in the arena of conflict, a persuasive proposition to maintain the status quo by exploiting the threat of latent violence.⁵³

The certainty of forceful reprisal—not the presence of ISR—may best explain the absence of battle between two parties uncommitted to peace. Collection assets, by themselves, do not make good peace-makers. While passes of U.S. space and aerial ISR capabilities sometimes correspond with behavioral changes within North Korea, Pyongyang's decision not to re-cross the 38th parallel *en masse* probably has little to do with the U-2 spy plane, or RC-12 reconnaissance aircraft, or any other ISR asset except as they relate to the readiness of South Korea's impressive defense.

Nonetheless, collection assets contribute to deterrence in multiple ways, including as a useful signal of intent and commitment that reinforces threat credibility. Following the 1979

assassination of South Korean President Park Chung Hee, the U.S. Joint Chiefs of Staff ordered an acceleration of Korean-based U-2 missions.⁵⁴ The U-2 sortie surge probably had multiple effects, including updating the information available to decision-makers; preparing tactical units for conflict; and, it may be surmised, signaling to Pyongyang America's battle-ready posture in a period of political upheaval. Opposing parties, however, are not always so intransigent, and international decision-making does not only pivot on fear.

Interest also motivates state behavior. Sometimes self-interested parties prefer a negotiated settlement but lack mutual trust. In such cases, ISR diplomacy—and its negative-observer effect—may prove a useful confidence building measure. Since 1974, for instance, regular U.N.-sanctioned aerial inspections of the Sinai Peninsula's demilitarized and limited armament zones have contributed to the virtual absence of threatening military activity between Egypt and Israel.⁵⁵ Similarly, the 1992 Open Skies Treaty permits routine ISR overflights among signatory states that help promote norms of transparency, reducing the security dilemma that once plagued Europe and North America.⁵⁶ Peace-keeping is an ISR niche.

Additionally, when a state knows it is under scrutiny, it may choose not to behave in a certain way for fear of being found out. This is the same logic of dissuasion that retail stores use in the obvious placement of surveillance cameras. In the years preceding 2003, Iraqi President Saddam Hussein elected not to resume weapons of mass destruction production in part because the near certainty of being caught would complicate his efforts to escape U.N. sanctions.⁵⁷ The threat of an American invasion, in Hussein's mind, was a distant and unlikely possibility.⁵⁸ More recently, in 2013, Chinese PLA Unit 61398 ceased hacking activity, albeit an operational pause of just three months, after being publicly exposed by the cyber security company Mandiant and U.S. government officials.⁵⁹ The presence of collection capabilities signals some level of

awareness and concern by their owners. As well, the prospect of being discovered when there are potential consequences can dissuade undesired behavior. Overt collection shapes the conduct of others.

Collection can also have a positive observer-effect. Like fear and interest, honor motivates state behavior, and the violation of sovereignty—real or perceived—is a proven recipe for confrontation. Peripheral collection by unarmed assets is the most common and benign non-permissive ISR profile, although it is not without risk. Three unfortunate examples include the 1968 capture of the USS Pueblo surveillance ship off North Korea's coast; the 1969 shootdown of an American EC-121 reconnaissance aircraft by a North Korean MiG-17 fighter jet over the Sea of Japan; and, the previously described 2001 EP-3 incident near China.⁶⁰ However, the vast, vast majority of peripheral collection missions occur without incident.

More provocative are penetrations into foreign territory. They can even, in theory, be used to incite conflict. In 1967, according to Isabella Ginor and Gideon Remez in their revisionist work *Foxbats Over Dimona*, Soviet reconnaissance jets overflew Israel's secret nuclear reactor as part of a plan to instigate an Arab-Israeli war that would set back Israel's nuclear program.⁶¹ However, Israel's devastating first-strike scuttled Soviet aims. Another escalatory act involving ISR occurred in 1997 when an Indian MiG-25 reconnaissance jet pilot deliberately caused a sonic boom over Islamabad while returning home, presumably to defy Pakistani counterparts and publicly announce his imperviousness to the compromised air defenses.⁶²

While the strategic efficacy in both 1967 and 1997 is questionable, if there was ever any forethought given, the examples suggest that ISR—in certain circumstances—can purposefully rile an adversary. However, the violation of sovereignty by unarmed ISR aircraft, while it may

strain relations, seldom causes war.⁶³ Nonetheless, ISR's ability to elicit unpredictable responses serves as a cautionary note for the strategist considering how to use collection's observer-effect or ISR diplomacy to shape the operational environment.

Recommendations

Several variables factor into the calculations of military strategists and force planners turning their attention to the Asia-Pacific, only a few of which rest within their purview. Some are uncertain. Is U.S. grand strategy to enmesh regional actors—especially China—in global institutions and mutual security frameworks that encourage peaceful norms?⁶⁴ Is it to deter aggression by opposing China's "counter-intervention" efforts?⁶⁵ Or, as during the Cold War, will the U.S. oscillate between—and sometimes simultaneously pursue—strategies of engagement and containment?⁶⁶ (Official ambiguity, although frustrating to mid-level officials, can make sensible statecraft.)

Some concerns are elusive. Will China prolong or shut the "strategic window" of its peaceful rise?⁶⁷ Other considerations are soft. Are U.S. interests in the Asia-Pacific any more tangible than aspirations for a stable, open, and possibly—eventually—democratic region? Precious few factors are relatively firm. Geography does place a premium on range and durability in maritime and tropical environments. And, the region's distance from North America elevates the importance of partnerships, access, and the reach and endurance of capabilities.

There are, however, variables that lie within the grasp of strategists and force planners. How might American military forces pursue U.S. policy goals? In what ways might ISR contribute to strategic success? The following recommendations aim to remove cognitive

barriers preventing ISR optimization, improve the efficacy of the ISR force, and expand the options of future strategists and force planners:

1. Increase the number of ISR capabilities operating in the Asia-Pacific to improve situational awareness, continually inform strategy-making, increase ISR diplomacy options, and signal added U.S. emphasis on the region.
2. Examine ISR diplomacy opportunities to improve U.S. basing options and regional access.⁶⁸
3. Examine confidence building opportunities among territorial disputants through third-party collection and information-sharing.
4. Negotiate regional norms for peripheral collection and intercepts to limit the frequency and fallout of tactical miscalculations.
5. Maintain an aerial ISR fleet to perform overt peacetime informing and shaping activities.
6. Accelerate development of ISR capabilities to enable tactics in high-threat anti-access/area-denial scenarios and maritime/tropical environments, including low-observation, long-dwell, wide-area surveillance, and secure data link technologies.⁶⁹
7. Train ISR to enable high-intensity tactics, especially in air-sea battle scenarios, across the joint force and with regional partners.
8. Consider growing a cadre of ISR professionals and analysts specialized in Asia-Pacific challenges, opportunities and relationships.⁷⁰
9. Teach ISR's three ways to generate strategic effects in professional military education, broadening the ISR-mindedness of future commanders, strategists, and planners.

10. Expand joint and service doctrine to recognize ISR's ability to directly shape the operational environment through ISR diplomacy and the observer-effect.
11. Re-elevate aerial ISR in airpower theory, placing it alongside competencies of "strategic" bombing, interdiction, close air support, air combat, and airlift.

Conclusion

ISR is neither intelligence nor analysis. Nor is it strategic or tactical. Conflating these ideas convolutes critical thinking on ISR and limits its potential contributions to strategy. ISR is the collection, ancillary movement and processing, and initial analysis and reporting of intelligence data. But, it is mostly collection.

ISR is also astrategic. More precisely, it is strategic only to the extent its consequences matter to strategy—which is frequent when purposefully employed. ISR brings about strategic effects in three distinct—and sometimes concurrent—ways. First, the collection that *informs* strategy-making is strategic. Second, the collection that *enables* necessary tactics is strategic. Third, the collection that favorably *shapes* the operational environment—including through ISR diplomacy and the observer-effect—is strategic.

As today's U.S. EP-3 aircraft lift to the sky and turn toward the South China Sea, they do so as part of an increasingly impressive ISR constellation in the Asia-Pacific. But, that sensor network will lack strategic relevance unless resourced sufficiently and employed intelligently. Force planners equipping commanders with relevant means will do well to consider ISR's full range of potential contributions as they program for and field various types of collection capabilities. Likewise, strategists intent on maximizing options must fully appreciate the ways that ISR brings about strategic effects. Failure to do so—due to constrictive doctrine, paucity of

imagination, or unavailable tools—decreases the flexibility of U.S. strategy. Conversely, inspired strategists will optimize all of their ways—including ISR’s ability to *inform*, *enable*, and *shape*—to creatively pursue U.S. policy aims in the Asia-Pacific and beyond.

Notes

¹ Shirley A. Kan, et al, *China-U.S. Aircraft Collision Incident of April 2001: Assessments and Policy Implications*, CRS Report for Congress RL30946 (Washington, D.C.: Congressional Research Service, 2001), 1-6.

² Steven Lee Myers and Christopher Drew, “Collision With China: Washington; Chinese Pilot Reveled in Risk, Pentagon Says,” *New York Times*, 6 April 2001.

³ Tyler Morton, “Manned Airborne Intelligence, Surveillance, and Reconnaissance: Strategic, Tactical...Both?” *Air & Space Power Journal* 26, no. 6, (November/December 2012): 34-36.

⁴ Mark E. Manyin, et al, *Pivot to the Pacific? The Obama Administration’s ‘Rebalancing’ Toward Asia*, CRS Report for Congress R42448 (Washington, D.C.: Congressional Research Service, 2012), 1.

⁵ Department of Defense, *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense*, (Washington, D.C.: Office of the Secretary of Defense, 5 January 2012), 2.

⁶ Roxana Tiron, “Joint Chiefs chairman reiterates security threat of high debt,” *thehill.com*, 24 June 2010, <http://thehill.com/homenews/administration/105301-mullen-reiterates-threat-excessive-debt-poses-to-nation> (accessed 27 January 2014); C. Richard Neu, Zhimin Mao, Ian P. Cook, *Fiscal Performance and U.S. International Influence*, (Santa Monica, CA: Rand Corporation, 2013).

⁷ Rick Gladstone and Matthew L. Wald, “China’s Move Puts Airspace in Spotlight,” *New York Times*, 27 November 2013.

⁸ For one literature review on the definition of intelligence, see Brian J. Tyler, “Operational Intelligence & Operational Design: Thinking About Operational Art,” (master’s thesis, School of Advanced Air & Space Studies, Maxwell AFB, AL, June 2011), 12-24.

⁹ For one explanation of the divergence of intelligence and its airborne collection operations, see David Deptula and Greg Brown, “A House Divided: The Indivisibility of Intelligence, Surveillance, and Reconnaissance,” *Air & Space Power Journal* 22, no. 2 (Summer 2008), 7-8.

¹⁰ This definition of intelligence paraphrases both Sherman Kent and U.S. joint doctrine. See Sherman Kent, *Strategic Intelligence for American World Policy*, 2nd edition (Princeton, NJ: Princeton University Press, 1966), xxv; Joint Publication (JP) 1-02, *Department of Defense Dictionary of Military and Associated Terms*, amended 15 December 2013, 179-180.

¹¹ The construct that is ISR remains amorphous and evolving, and recent Air Force doctrine—in contrast to what is presented in this paper—moves toward a more expansive conception of ISR as something roughly equivalent to intelligence. This author appreciates many of the organizational imperatives behind such evolution, but finds utility in precise, differentiated terms and in recognizing the current joint understanding of ISR. See both Air Force Doctrine Document (AFDD) 2-9, *Intelligence, Surveillance, and Reconnaissance Operations*, 17 July 2007, 1-2, and AFDD 2-0, *Global Integrated Intelligence, Surveillance, and Reconnaissance Operations*, 6 January 2012, 1-2.

¹² JP 1-02, 183.

¹³ Kent, *Strategic Intelligence for American World Policy*, 4; Richard K. Betts, “Analysis, War, and Decision: Why Intelligence Failures are Inevitable,” *World Politics* 31, no. 1 (October 1978), 61; and Michael Herman, *Intelligence Services in the Information Age: Theory and Practice* (Portland, OR: Frank Cass, 2001), 4; also see Tyler, “Operational Intelligence and Operational Design,” 29-34, from which this paragraph on collection and the next paragraph on analysis are partly distilled.

¹⁴ Herman, *Intelligence Services in the Information Age*, 4.

¹⁵ Kent, *Strategic Intelligence for American World Policy*, 4.

¹⁶ Charles A. Mangio and Bonnie J. Wilkinson, *Intelligence Analysis: Once Again*, AFRL-RH-WP-TP-2010-0006 (Wright-Patterson AFB, OH: Air Force Research Laboratory, 2008), 3.

¹⁷ James B. Bruce and Roger Z. George, “Intelligence Analysis—The Emergence of a Discipline,” in *Analyzing Intelligence: Origins, Obstacles, and Innovations*, ed. Roger Z. George and James B. Bruce (Washington, DC: Georgetown University Press, 2008), 1.

¹⁸ Kent, *Strategic Intelligence for American World Policy*, 4.

¹⁹ Joint Publication (JP) 2-0, *Joint Intelligence*, 22 June 2007, I-15.

²⁰ David T. Moore, *Critical Thinking and Intelligence Analysis* (Washington, DC: Center for Strategic Intelligence Research, 2006), 1.

²¹ JP 2-0, GL-16.

²² Colin S. Gray, *Exploring Strategy* (Westport, CT: Praeger, 1998), 61.; see also Carl von Clausewitz, *On War*, eds. Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1976), 177.

²³ Gray, *Exploring Strategy*, 61-62; see also Clausewitz, *On War*, 177.

²⁴ Gray, *Exploring Strategy*, 61.

²⁵ Robert Pape, *Bombing to Win: Air Power and Coercion in War* (Ithaca, NY: Cornell University Press, 1996), 56; Karl Mueller, “Strategies of Coercion: Denial, Punishment, and the Future of Air Power,” *Security Studies* 7, no. 3 (Spring 1998): 185-186.

²⁶ Pape, *Bombing to Win*, 55-56; Mueller, “Strategies of Coercion,” 185-186.

²⁷ Stephen Bungay, *The Most Dangerous Enemy: An Illustrated History of the Battle of Britain* (Minneapolis, MN: Zenith Press, 2010), 255-260; this author first encountered the idea that the Battle of Britain was an example of air superiority fighter aircraft used with strategic effect during a lecture by Col Raymond P. O’Mara, “Battle of Britain,” Battle of Britain Remembrance (lecture, Order of Daedalians, Maxwell AFB, AL, 13 September 2013).

²⁸ Richard B. Frank, *Downfall: The End of the Imperial Japanese Empire* (New York, NY: Penguin Books, 2001) 331-348; Sumio Hatano, “The Atomic Bomb and Soviet Entry into the War: Of Equal Importance,” in *The End of the Pacific War: Reappraisals*, ed. Tsuyoshi Hasegawa (Stanford, CA: Stanford University Press, 2007), 95-112; Barrett Tillman, *Whirlwind: The Air War Against Japan, 1942-1945* (New York, NY: Simon & Schuster, 2010), 1-275.

²⁹ Roger G. Miller, *To Save a City: The Berlin Airlift, 1948-1949* (College Station, TX: Texas A&M University Press, 2000); this author first encountered the notion of air mobility for

strategic effect during a lecture by James M. Tucci, "The Berlin Airlift," (lecture, School of Advanced Air & Space Studies, Maxwell AFB, AL, 1 November 1 2010).

³⁰ Robert F. Futrell, *The United States Air Force in Korea, 1950-1953* (Washington, DC: US Government Printing Office, 2000), 700-704. For more qualified assessments of airpower's contributions in the Korean War, see Conrad C. Crane, *American Airpower Strategy in Korea, 1950-1953* (Lawrence, KS: University Press of Kansas, 2000), 1-9, 171-184, Xiaoming Zhang, *Red Wings Over the Yalu: China, the Soviet Union, and the Air War in Korea* (College Station, TX: Texas A&M University Press, 2002), 201-212; and Colin S. Gray, *Airpower for Strategic Effect* (Maxwell AFB, AL: Air University Press, 2012), 165-171.

³¹ Tyler, "Operational Intelligence and Operational Design," 115-118.

³² John G. Heidenrich, "The State of Strategic Intelligence: The Intelligence Community's Neglect of Strategic Intelligence," *Studies in Intelligence* 51, no 2 (8 June 2007), <https://www.cia.gov/library/center-for-the-study-of-intelligence/csi-publications/csi-studies/studies/vol51no2/the-state-of-strategic-intelligence.html>.

³³ Heidenrich, "The State of Strategic Intelligence."

³⁴ Gregory W. Pedlow and Donald E. Welzenbach, *The CIA and the U-2 Program, 1954-1974* (Washington, DC: History Staff Center for the Study of Intelligence, 1998), 111-112, 159-170; Pat Norris, *Spies in the Sky: Surveillance Satellites in War and Peace* (Heidelberg, GE: Praxis Publishing Ltd., 2008) 57-77; Dino A. Brugioni, *Eyes in the Sky: Eisenhower, the CIA, and Cold War Aerial Espionage* (Annapolis, MD: Naval Institute Press, 2010) 146-391; Lawrence Freedman, *The Evolution of Nuclear Strategy*, 3rd edition (New York, NY: Palgrave Macmillan, 2003), 3-86, 115-242; Lawrence Freedman, *U.S. Intelligence and the Soviet Strategic Threat*, 2nd edition (Princeton, NJ: Princeton University Press, 1986), 72-77.

³⁵ Pedlow and Welzenbach, *The CIA and the U-2 Program, 1954-1974*, 199-211; Norris, *Spies in the Sky*, 49-51.

³⁶ Yefim Gordon and Dmitriy Komissarov, *OKB Mikoyan: A History of the Design Bureau and its Aircraft* (Leicester, UK: Midland Counties Publications, Ltd., 2009), 324-345; Associated Press, "Soviet Pilots Fly MIGs Over Sinai," *Palm Beach Post-Times*, 17 November 1971; United Press International, "Soviet-made MIGs Fly Over Sinai," *Star-News*, 17 May 1972; Paul F. Crickmore, *Lockheed SR-71 Operations in Europe and Middle East* (New York, NY: Osprey Publishing, Ltd, 2009), 6-7.

³⁷ Nathalie Malinarich, "Flashback: The Berlin Disco Bombing," *BBC News Online*, 13 November 2001, <http://news.bbc.co.uk/go/pr/fr/-/2/hi/europe/1653848.stm> (accessed on 11 February 2014); Seymour M. Hersh, "Panama Strongman Said to Trade in Drugs, Arms and Illicit Money," *New York Times*, 12 June 1986.

³⁸ Even so-called intelligence failures shed light on ISR's crucial informative role. In most cases of surprise, collection is sufficient to provide strategic warning. In more rare instances, when little or no collection exists, surprise becomes almost unavoidable. Studied examples of surprise include: American intelligence botched the divination of Imperial Japanese aims and reach prior to the December 1941 attack on Pearl Harbor. Less than a decade later, in 1950, both President Harry Truman and General Douglas MacArthur twice failed to ascertain the menacing scale and probable intent of massing Communist armies on the Korean Peninsula. The 1968 Tet

Offensive blindsided President Lyndon Johnson, if not his military commanders and intelligence apparatus. In 1979, the Iranian Revolution and Soviet invasion of Afghanistan both caught President Jimmy Carter's administration flat-footed. The unanticipated onset of the 1973 Yom Kippur War became a great *mehdal* for both the U.S. and Israeli governments. More recently, the 1990 Iraqi invasion of Kuwait surprised President George H.W. Bush. Likewise, the Soviet Union's 1991 collapse, India's 1998 nuclear test, the terrorist attacks of September 11, 2001, and the Arab Spring that commenced in late 2010 comprise a litany of recent events that were allegedly unforeseen by the U.S. intelligence community. See Betts, "Analysis, War, and Decision," 61; Paul R. Pillar, "Think Again: Intelligence," *Foreign Policy*, 3 January 2012, <http://www.foreignpolicy.com/articles/2012/01/03/intelligence> (accessed 1 February 2014); Roberta Wohlstetter, *Pearl Harbor: Warning and Decision* (Stanford, CA: Stanford University Press, 1962), 3-4; P.K. Rose, "Two Strategic Intelligence Mistakes in Korea, 1950," *Studies in Intelligence* vol 45, No 5 (Fall-Winter 2001), 57-65; Central Intelligence Agency, *Intelligence Warning of the Tet Offensive in South Vietnam: Interim Report* (Washington D.C.: Central Intelligence Agency, 8 April 1968), document is now declassified; Ian Black and Benny Morris, *Israel's Secret Wars: A History of Israel's Intelligence Services* (New York, NY: Grove Press, 1991), 282-321; Matthew T. Penney, "Intelligence and the 1973 Arab-Israeli War," in *President Nixon and the Role of Intelligence in the 1973 Arab-Israeli War* (Yorba Linda, CA: Richard Nixon Presidential Library and Museum, 2013), 7-13; Robert Jervis, *Why Intelligence Fails: Lessons From the Iranian Revolution and the Iraq War* (Ithaca, NY: Cornell University Press, 2010), 15-122; Alex Roberto Hybel, *Power Over Rationality: The Bush Administration and the Gulf Crisis* (Albany, NY: State University of New York Press, 1993), 7; Michael R. Gordon and Bernard E. Trainor, *The Generals' War: The Inside Story of the Conflict in the Gulf* (Boston, MA: Little, Brown and Company, 1995), 3-6; John Hughes-Wilson, *Military Intelligence Blunders* (New York, NY: Carrol & Graf Publishers, 1999); John Keegan, *Intelligence in War: The Value—and Limitations—of What the Military Can Learn About the Enemy* (New York, NY: Vintage Books, 2002); and Uri Friedman, "The Ten Biggest American Intelligence Failures," *Foreign Policy*, 3 January 2012, http://www.foreignpolicy.com/articles/2012/1/3/the_ten_biggest_american_intelligence_failures (accessed 1 February 2014).

³⁹ Gregory Elder, "Intelligence in War: It Can Be Decisive," *Studies in Intelligence* 50, no. 2 (2006): 15-17.

⁴⁰ Jeffrey H. Norwitz, "Leveraging Operational Intelligence: The Battle of Tannenberg and Masurian Lakes, 1914," (master's thesis, Naval War College, Newport, RI, 14 May 2001); Elder, "Intelligence in War," 15-17.

⁴¹ Edward J. Drea, *MacArthur's ULTRA: Codebreaking and the War against Japan, 1942-1945* (Lawrence, KS: University Press of Kansas, 1992), 61-71.

⁴² Robert S. Ehlers, Jr., *Targeting the Third Reich: Air Intelligence and the Allied Bombing Campaigns* (Lawrence, KS: University of Kansas Press, 2009), 1-14; Robert F. Futrell, "Case Study: USAF Intelligence in the Korean War," in *The Intelligence Revolution: A Historical Perspective*, ed. Lt Col Walter T. Hitchcock (Washington, DC: U.S. Government Printing Office, 1991), 275-294; John R. Glock, "Evolution of Air Force Targeting," *Airpower Journal* 8, no. 3 (Fall 1994): 14-28; Benjamin S. Lambeth, *The Transformation of American Airpower* (Ithaca, NY: Cornell University Press, 2000), 9-10; Richard P. Hallion, "Air and Space Power:

Climbing and Accelerating,” in *A History of Air Warfare*, ed. John Andreas Olsen (Washington, DC: Potomac Books, 2010), 378-379.

⁴³ Rebecca Grant, “Armed Overwatch,” *Air Force Magazine*, December 2008, 40-44; Ellen Nakashima and Craig Whitlock, “With Air Force’s Gorgon drone ‘we can see everything,’” *Washington Post*, 2 January 2011; CJ Chivers, “A Changed Way of War in Afghanistan’s Skies,” *New York Times*, 15 January 2012.

⁴⁴ The author arrived at the notion of ISR diplomacy after encountering a case for air diplomacy. While air diplomacy pertains to proactive conflict prevention by actions in and through the air domain, ISR diplomacy can be a multi-domain approach, concentrates on information-sharing, and may be used to pursue a variety of strategic ends. See Adam B. Lowther, “Air Diplomacy: Protecting American National Interests,” *Strategic Studies Quarterly* 4, no. 3 (Fall 2010): 2-14.

⁴⁵ Everett C. Dolman, *Pure Strategy: Power and Principle in the Space and Information Age* (New York, NY: Frank Cass, 2005), 18.

⁴⁶ Adlai Stevenson, “U.N Security Council Address on Soviet Missiles in Cuba, delivered 25 Oct 1962,” *American Rhetoric Online Speech Bank*, <http://www.americanrhetoric.com/speeches/adlaistevensonunitednationscuba.html> (accessed 11 February 2014); *Jean H. Baker, The Stevensons: A Biography of an American Family* (New York, NY: W.W. Norton & Co., 1996) 421-423; McGeorge Bundy, *Danger and Survival: Choices About the Bomb in the First Fifty Years* (New York, NY: Random House, 1988), 391-462; Michael Dobbs, *One Minute to Midnight: Kennedy, Khrushchev and Castro on the Brink of Nuclear War* (New York, NY: Alfred A. Knopf, 2008), 112-134.

⁴⁷ Pedlow and Welzenbach, *The CIA and the U-2 Program, 1954-1974*, 231-233.

⁴⁸ Pedlow and Welzenbach, *The CIA and the U-2 Program, 1954-1974*, 232.

⁴⁹ Bob Woodward, *The Commanders* (New York, NY: Simon & Schuster, 1991), 263-273. Interestingly, Woodward’s account of Secretary Cheney’s negotiations with King Fahd also offers another insight into ISR diplomacy—a warning about overselling intelligence of a threat to gain advantage. According to Woodward, the Reagan administration shared several alarming reports on the Iranian threat against Saudi Arabia in an effort to garner basing rights in the kingdom. King Fahd refused and, when the attacks never occurred, became skeptical of U.S. intelligence-sharing.

⁵⁰ Werner Heisenberg, *The Physical Principles of the Quantum Theory*, transl. Carl Eckart and F.C. Hoyt (Mineola, NY: Dover Publications, Inc., 1949), 13-19; Henry A. Landsberger, *Hawthorne Revisited—Management and the Worker: Its Critics and Developments in Human Relations in Industry* (Ithaca, NY: Cornell University Press, 1958).

⁵¹ For two tellings of the classic deception example, see Michael E. Howard, *Strategic Deception in the Second World War: British Intelligence Operations Against the German High Command* (New York, NY: W.W. Norton & Company, Inc., 1995) and Roger Hesketh, *Fortitude: The D-Day Deception Campaign* (Woodstock, NY: The Overlook Press, 2000).

⁵² Thomas C. Schelling, *Arms and Influence*, (New Haven, CT: Yale University Press, 1966), 71.

⁵³ Thomas C. Schelling, *The Strategy of Conflict* (Cambridge, MA: Harvard University, 1980), 9.

⁵⁴ Strategic Air Command, *History of SAC Reconnaissance Operations: 1978, 1979, and 1980*, Historical Study No. 187, (Omaha AFB, NB: Headquarters Strategic Air Command Office of the Historian, 1 June 1982), 187-191, <http://www2.gwu.edu/~nsaarchiv/NSAEBB/NSAEBB74/U2-45.pdf> (accessed 7 February 2014).

⁵⁵ Michael Krepon and Peter D. Constable, “The Role of Aerial Inspections in Confidence Building and Peacemaking,” in *Arms Control and Confidence Building in the Middle East*, ed. Alan Platt (Washington, DC: US Institute of Peace Press, 1992), 45-49.

⁵⁶ Patrick E. Tyler, “Agreement Will Open Skies to Reconnaissance Flights,” *New York Times*, 21 March 1992; Daryl Kimball, “The Open Skies Treaty at a Glance,” *Arms Control Association*, July 2005, www.armscontrol.org/pdf/openskies.pdf (accessed 6 February 2014).

⁵⁷ Central Intelligence Agency (CIA), *Comprehensive Report of the Special Advisor to the DCI on Iraq’s WMD, with Addendums (Duelfer Report)*, (Washington, D.C.: Central Intelligence Agency, 30 September 2004), 1, 34-35, 46.

⁵⁸ CIA, *Duelfer Report*, 32.

⁵⁹ David E. Sanger and Nicole Perlroth, “Hackers From China Resume Attacks on U.S. Targets,” *New York Times*, 19 May 2013.

⁶⁰ Robert E. Newton, *The Capture of the USS Pueblo and Its Effect on SIGINT Operations*, Special Series Crisis Collection 7, United States Cryptologic History (Ft. George G. Meade, MD: National Security Agency, 1992), 1-143; Matthew M. Aid, *The Secret Sentry: The Untold History of the National Security Agency* (New York, NY: Bloomsbury Press, 2009), 140-142, 149-150.

⁶¹ Isabella Ginor and Gideon Remez, *Foxbats Over Dimona: The Soviets’ Nuclear Gamble in the Six-Day War* (Binghamton, NY: Vail-Ballou Press, 2007).

⁶² Sujan Dutta, “So long, old superspy in the sky: Record-holder MiG 25, Indian Air Force’s relic from the Cold War era, flies its last sortie,” *The Telegraph*, 2 May 2006, http://www.telegraphindia.com/1060502/asp/frontpage/story_6171245.asp (accessed 8 February 2014); Peter Steinemann, “Vayu Sena: Recce Incursion,” *Air Power International*, <http://vayu-sena.tripod.com/other-1997mig25-1.html> (accessed on February 8, 2014).

⁶³ Between 1956 and 1960, U.S. U-2 spy planes overflew Soviet territory 24 times, ending only after the May 1960 shootdown of Francis Gary Powers’ aircraft by a surface-to-air missile. No war ensued. As tensions mounted leading up the 1962 Cuban Missile Crisis, numerous U-2 missions over Cuba—including the shootdown of Major Rudolph Anderson on October 27—did not spark wider conflict. Similarly, the 1999 shootdown of a Pakistani Breguet Atlantique reconnaissance plane by Indian MiG-21 fighter planes further tattered the South Asians’ relationship, but did not reignite the recently terminated Kargil War. Collection incursions alone—even those resulting in deadly exchanges—are normally insufficient *casus belli*. See Chris Pocock, *Dragon Lady: The History of the U-2 Spyplane* (Shrewsbury, England: AirLife, 1989), 59-199; Pedlow and Welzenbach, *The CIA and the U-2 Program, 1954-1974*, 199-211; Dobbs, *One Minute to Midnight*, 3-31, 135-158, 230-253; Barry Bearak, “Indians Down Pakistan

Plane; 16 Aboard Die,” *New York Times*, 11 August 1999. As an aside worth further study and possible consideration by strategists mindful of escalation, there may be an inverse relationship between the level of assumed risk in collection missions and the provocation potential of that mission. Manned ISR overflights seem to antagonize more so than unmanned sorties; penetrating ISR riles more than peripheral collection, especially when publicized to domestic audiences; peripheral collection bothers more than stand-off collection, such as from space; and, physical presence, even peripheral to sovereign territory, stokes embers more so than virtual presence, such as through cyberspace. The level of assumed risk may also positively correlate with the level of pre-mission hostility between adversaries.

⁶⁴ David Shambaugh, *China Goes Global: The Partial Power* (New York, NY: Oxford University Press, 2013), 269-317; Peter Jackson, “Deterrence, Coercion, and Enmeshment: French Grand Strategy and the German Problem after World War I,” in *The Challenge of Grand Strategy: The Great Powers and the Broken Balance between the World Wars*, eds. Jeffrey W. Taliaferro, Norrin M. Ripsman, and Steven E. Lobell (New York, NY: Cambridge University Press, 2012), 37-65; Peter J. Katzenstein, “Conclusion: National Security in a Changing World,” in *The Culture of National Security: Norms and Identity in World Politics*, edited by Peter J. Katzenstein (New York, NY: Columbia University Press, 1996), 498-537; Robert O. Keohane, *After Hegemony: Cooperation and Discord in the World Political Economy* (Princeton, NJ: Princeton University Press, 2005), 135-216, 243-259; Joseph S. Nye, Jr., *The Future of Power* (New York, NY: PublicAffairs, 2011), 153-234; G. John Ikenberry, *Liberal Leviathan: The Origins, Crisis, and Transformation of the American World Order* (Princeton: Princeton University Press, 2011), 333-360.

⁶⁵ Thomas Donnelly, et al, *Rebuilding America's Defenses: Strategy, Forces and Resources for a New Century* (Washington, D.C.: Project for the New American Century, September 2000), iv, <http://www.webcitation.org/5e3est5IT> (accessed 1 February 2014); Andrew J. Bacevich, *American Empire: The Realities and Consequences of U.S. Diplomacy* (Cambridge, MA: Harvard University Press, 2002), 1-312; Department of Defense (DoD), *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2012* (Washington, D.C.: Office of the Secretary of Defense, May 2012), 1-4.

⁶⁶ Evan S. Medeiros, “Strategic Hedging and the Future of Asia-Pacific Stability,” *The Washington Quarterly* 29, no. 1 (Winter 2005-2006): 145-167; John Lewis Gaddis, *Strategies of Containment: A Critical Appraisal of American National Security Policy During the Cold War*, Revised and Expanded edition (New York, NY: Oxford University Press, 2005), 3-379; John Lewis Gaddis, *Russia, the Soviet Union, and the United States: An Interpretive History*, 2nd edition (New York, NY: McGraw Hill Publishing Co., 1990), 175-342.

⁶⁷ DoD, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2012*, iv.

⁶⁸ Alan J. Vick and Jacob L. Heim, *Assessing U.S. Air Force Basing Options in East Asia* (Santa Monica, CA: RAND Project Air Force, January 2013), 1-103.

⁶⁹ Marc V. Schanz, “ISR After Afghanistan,” *Air Force Magazine*, January 2013, 22-27.

⁷⁰ For a useful study on the need for regionally specialized analysts, see Jason B. Lamb, “Air Force Intelligence Officer Regional Specialization: Force Multiplier or Divider?” (master’s thesis, School of Advanced Air & Space Studies, Maxwell AFB, AL, June 2008), 1-78.

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