Strengthening Intelligence, Surveillance, and Reconnaissance Employment in the Indo-Pacific Region

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In February 2022, Pres. Joseph Biden signed the new *Indo-Pacific Strategy of the United States*. This strategy reaffirms the United States as an Indo-Pacific power and highlights the region's significance as the world's center of gravity.[1] Despite the aspirations of the United States to maintain a position of strength in the Indo-Pacific region, China's economic rise over the past two decades has paved the way for a commensurate rise in their military capability. Currently, the People's Republic of China (PRC) possesses the world's largest active-duty military force,[2] and its military expenditure rate is second only to the United States.[3] Increasingly, the PRC is leveraging these armed forces along with its considerable economic, technological, and diplomatic might to become the world's most influential power.

One way the United States has attempted to counter China's aggressive and invasive actions in the region is through peacetime reconnaissance flights, also referred to as sensitive reconnaissance operations (SRO). For decades, the United

States has employed these missions to gather intelligence on the PRC's military and expansionist developments; however, the effectiveness of these missions has arguably been limited. For SRO to be more influential, Pacific Air Forces (PACAF) recommends a deliberate expansion and improvement of its current execution methodology.[4] This would include three main enhancements to the employment of SRO in the theater: institutionalize more cooperative exchanges with allies and partner nations; fully integrate with theater strike and electronic warfare (EW) assets and shorten the "kill chain"; and better capitalize on SRO-derived data by investing in artificially-enhanced machine learning to support current operations.

Background

SRO is defined as "aerial reconnaissance operations planned for and legally executed in international airspace" during peacetime.[5] The United States military has flown SRO missions for more than 70 years against adversarial nations in the Pacific, chiefly Russia, China, and North Korea. The United States currently flies more than 10 different variants of SRO platforms in this theater, including the manned USAF RC-135 Rivet Joint and U-2 Dragon Lady, as well as remotely piloted "unmanned" vehicles such as the RQ-4 Global Hawk. The aim of flying SRO missions is twofold. The first and most recognized purpose is to collect intelligence on adversary nations. The other and less appreciated function of SRO is its diplomatic role. In his doctoral dissertation *The Lens of Power: Aerial Reconnaissance and Diplomacy in the Airpower Century*, Col Joseph Santucci (USAF), a career reconnaissance pilot and graduate of the Air Force's School of Advanced Air and Space Studies, explains how SRO can be used to render diplomatic statements without the need to provide additional "military commitment."[6] Santucci asserts SRO ". . . in peacetime is an extension of diplomatic interests," and can act as a catalyst for achieving US goals.[7]

The diplomatic effects of SRO can be divided into two main categories. The first is the act of demonstrating "presence."[8] An SRO asset's presence in the vicinity of an adversary's territory is a method for communicating US interest in the area. Pres. Richard Nixon demonstrated this approach during the Arab-Israeli War in 1973.[9] By tasking the SR-71 to fly missions over the Sinai, he sent a message to the Arabs, Israelis, and Russians that the United States was watching the conflict and was keenly interested in its outcome.

SRO's second diplomatic effect is the ability to communicate "awareness." When SRO missions are executed against a target, it conveys our perceived awareness of the actor's activities. Pres. Dwight Eisenhower capitalized on this effect when he employed U-2 aircraft during the Suez Canal crisis of 1956. By flying

these missions, he telegraphed not-so-subtly to the Israelis, British, and French that the United States was aware of their military activities, in contradiction of their envoy's public statements.[10]

Flying SRO missions provides national decision makers with unique insights regarding adversary activities, and our ability to declassify and expose the public to nefarious activity can be very illuminating. One prominent example of this approach is Pres. John Kennedy's decision to release declassified information to the world regarding Soviet missile deployments in Cuba. In his iconic address to the nation on 22 October 1962, President Kennedy made the case against the Soviet Union and outlined our national objectives using data obtained from SRO flights.[11]

Chinese Perceptions and Reactions

Today, SRO missions continue, particularly in the Indo-Pacific region, and most SRO flights in the region keep a close eye on China. Understanding perceptions of our SRO and the drivers behind Beijing's reactions is critical. Without this knowledge, US Indo-Pacific Command (INDOPACOM) cannot successfully wield SRO as an effective diplomatic tool to shape China's behavior.

There is an abundance of evidence that documents China's discontent with US SRO activities. Joseph Prueher, who served as the US Ambassador to China in the late 1990s, and the former Commander in Chief of United States Pacific Command, noted that China is "extremely prickly about sovereignty-related issues."[12] Santucci highlights that China's sensitivity in this area is further aggravated by "ever-present aerial reconnaissance aircraft off the coast."[13] Prueher's and Santucci's assessments are further supported by respected political scientists Andrew Scobell and Larry Wortzel, who assert that China views SRO as "interventionism," which compels Beijing to "defend their sovereignty . . . with military means."[14]

Beijing's words and actions over the past five decades against SRO demonstrate a firm resolve to maintain control of key areas within China's defined sphere of influence. In recent years, the Chinese have issued a litany of public statements condemning SRO. These include calls from China's president and other senior officials for the United States to halt SRO activities in the South China Sea (SCS).[15] Chinese military officials have also characterized US SRO flights in the SCS as "provocative" and reflective of a "cold war mentality."[16] In recent years, China's previously published defense strategy declared the SCS to be an "inalienable part of Chinese territory" and condemns US operations in the area for adding complexity to regional security.[17]

The Chinese have actively challenged the legitimacy of SRO activities via the United Nations Convention on the Law of the Sea (UNCLOS) treaty, arguing they are "an abuse of rights," under Article 301 of the treaty."[18] China's most notable objections to SRO have been registered through military responses. Since the 1960s, China's air defense reactions to US reconnaissance flights have resulted in 22 Americans' deaths.[19] Although there has not been a shoot down in many years, China typically meets our SRO missions with armed and sometimes aggressive, unsafe, and unprofessional fighter reactions.[20]

Why Sensitive Reconnaissance Operations?

SRO is essential as a tool of military and diplomatic power because it provides the United States with unique capabilities unavailable from other means. Larry Tart and Robert Keefe argue that "satellites can only complement but cannot replace manned intelligence platforms."[21] US national and commercial satellites have predictable, established revisit rates over target areas of interest based on their orbital geometry. Repositioning a satellite to take images or collect intelligence "on-demand" is not a simple task, despite what Hollywood movies would lead us to believe. Only SRO missions provide tactical, rapidly responsive, and tailored profiles to meet a commander's objectives. Once airborne, SRO missions can be dynamically adjusted to collect and monitor emerging activity in a matter of minutes, if positioned correctly. Satellite response times may take several hours or even days, depending on the capability requested and the location of the activity.

In addition, the United States can no longer assume it has assured access to space. Nations such as China and Russia are quickly developing antisatellite capabilities ranging from missiles, lasers, and cyberattacks to other space-based attack methods.[22] These threats put many US military and commercial satellites, especially the ones in low earth orbit, within range of a kinetic or nonkinetic disruption. The United States currently has little defense against these attacks. Furthermore, the simple tactic of generating space junk or debris can easily have a deleterious effect on satellites and communications links. In November 2021, Russia targeted one of its satellites with an antisatellite missile in low earth orbit, generating a large debris field with more than 1,500 trackable pieces, some of which threatened the safety of the International Space Station.[23] China and India have conducted similar tests over the past decade, with similar debris-laden results.

Recommendations for Improving SRO Employment

To maximize SRO's effectiveness, we must evolve our methodologies to fully capitalize on the advantages of airborne intelligence, surveillance, and reconnaissance (ISR). In this era of great-power competition, the United States must use all means at its disposal to wield its influence, conduct deterrence, and/or exert pressure, if necessary, to be effective within today's "grey zone" operations—coercive state activities short of open hostilities.[24] The use of ISR aircraft in the Indo-Pacific has a rich and storied history, but to continue its effectiveness, improvements must be made in the employment of these capabilities for successful use within the grey zone.

Innovative Partnering

First and foremost, more innovative techniques for partnering with our allied nations in the Pacific should be explored. Col Jacob Holmgren, the current PACAF Senior Intelligence Officer, recently called for expanded interoperability, data sharing, and cooperative next-generation intelligence analysis as ways to transform our partnerships.[25] These are excellent ways to implement more comprehensive integration with our partners and should most assuredly be done posthaste. To take these partnering concepts further, however, the United States should also consider full integration with our allies and partners by embedding personnel directly into our partners' ISR mission planning units. Opportunities are emerging to expand this concept, now that nations such as South Korea and Japan are acquiring the RQ-4 Global Hawk, and the Australians are procuring the MQ-4 maritime version of this platform.[26] This affords the United States with a special opportunity to directly guide ISR planning and cooperative SRO hand-in-hand with our partners at their squadrons and wings. Such a step would cost the United States very little in terms of manpower and resources but would go a long way toward forging stronger partnerships, especially within the ISR community.

In addition, PACAF can strengthen its partnerships through more frequent subject-matter expert exchanges (SMEE) and airmen-to-airmen talks (A2AT) to advance our partners' medium-altitude unmanned aerial system (UAS) capabilities, which will in turn increase regional airborne ISR capacity. Japan and Taiwan, among others, have expressed interest in purchasing a variant of the MQ-9 Reaper, for example. PACAF has the opportunity to accelerate partner-nation capability through regular engagements focused on interoperability with US capabilities, systems, and architecture. Leveraging the USAF's decades of medium-altitude UAS experience would bolster our partners' expertise and extend the ISR reach to

geographical areas in which the United States does not typically operate, such as the Taiwan Strait.

Increased Integration with Strike and Electronic Warfare Assets

To meet the objectives stated within the August 2018 *Next Generation ISR Dominance Flight Plan*, the United States must seek to bolster its readiness and lethality to deliver decisive advantage at the right time and place.[27] A major line of effort to achieve these ends is to better integrate with strike and EW platforms and routinely rehearse our ability to find, fix, track, target, engage, and assess, otherwise known as the "kill-chain" cycle.[28] ISR platforms play the pivotal role in the USAF's ability to identify and track adversary targets for strike, especially mobile or relocatable equipment. However, ISR sensors, joint force "shooters," and EW platforms do not currently interface at the rate and speed necessary to keep pace with enemy movements. To get data from the find/fix/track stages of the kill chain to the engagement phase, too many steps and processes must occur to interconnect these main components. Today, target-quality data cannot get from an ISR platform to a shooter directly; there are various dependencies, data throughput limitations, and latency issues that prevent the rapid engagement needed to defeat today's modern and mobile technologies. The end result is a clunky, slow, fragile kill-chain process that cannot routinely disable or destroy a mobile target from more distant standoff ranges without an inordinate amount of luck.

There is also a sizable gap in our current force between ISR platforms and 5th-generation fighters/bombers. More than 10 years ago, the nation's senior intelligence officer in the USAF, Lt Gen Robert Otto, recognized this shortfall in his *Air Force ISR 2023: Delivering Decision Advantage* document, and arguably little progress has been made since. He stated, "[w]e recognize that IMD [intelligence mission data] is integral to 5th-generation survivability in contested/highly contested environments and is paramount to a joint force commander's ability to meet his or her objectives."[29] Lieutenant General Otto called for redoubling our efforts with the larger intelligence community, leveraging technology solutions to become more efficient in our IMD production capacity, thereby ensuring "our 5th-generation aircraft, associated smart weapons, space, and cyber systems always have the most current intelligence data."[30]

Today, PACAF and INDOPACOM are falling short on their efforts to conduct end-to-end strike integration training with fighter/bomber assets such as B-52 or F-35s in a realistic environment shaped by the adversary's actions. Too often, SRO missions are busy intelligence gathering or maintaining a diplomatic presence in sensitive areas, which supersede lethal strike training priorities. This

would stand to reason, since SRO assets must go where the action is; often this is on an adversary's doorstep. However, conducting dress rehearsals for strike training within 20–30 miles of a nation's border is rightfully seen as provocative and threatening, particularly when employing advanced 5th-generation fighters or nuclear-capable bombers.

Integration between ISR and strike assets *can* improve, if accomplished in a deliberate, routinely scheduled, and prioritized manner, even if this means a reduction in routine ISR collection. The more INDOPACOM assets can exercise the F2T2EA process from actual ISR retrograde orbits, relying solely on intelligence dissemination and interoperability processes, and not skipping steps or overcompensating for limitations when the kill chain breaks down, the better it will identify and expose the current flaws within the kill-chain process as they currently exist. Too often we simulate adversary activity on a training range, without operational platforms or operating parameters, to simulate an actual end-to-end kill chain. The more we can conduct integrated ISR collection and strike training in theater in the challenging Indo-Pacific region, the better prepared we will be for an actual conflict.

Techniques to Improve Analysis and Data Flow

The data generated from SRO platforms must be treated as a weapon, not merely an enabler. Intelligence data requires a great deal of attention in the modern age of information warfare, beyond its mere acquisition, to deliver decision advantage. Within the kill-chain process, data must rapidly be processed and directed to precise destinations to enable much quicker engagements, at speeds faster than humans can sense-make. Machine-enabled artificial intelligence and advanced algorithmic computations are needed to improve the quality and formatting of the data. Today's war fighter needs the intelligence and communications-savvy communities to truly weaponize data, much as we have weaponized the air, maritime, space, and cyber domains, to achieve their desired effects. To accomplish this, the USAF and the joint force must create interlacing, interactive, more autonomous, self-guiding data processors to make independent decisions faster, so that the humans in the loop can draw their own conclusions and act much quicker than ever before. Ensuring information dominance in future combat with a peer competitor is in itself an arms race. The next conflict may well be determined by who uses data the most efficiently and effectively; the United States may not yet be prepared to truly weaponize its data in such a manner.

Finding a way to add an interconnected web of survivable, secure communications systems fueled by artificial intelligence to our joint ISR platforms and kill-chain weapons is paramount to winning the information warfare battle. The

USAF must be innovative in its approach to connecting sensors to shooters, much as US Special Operations Command has with the development of the Tactical Radio Application eXtension (TRAX).[31] This initiative has equipped the special operations community with the ability to "allow forces on the ground to direct overhead assets to targets, identify friendly and hostile forces, and send and receive real-time video feeds. TRAX permits operators to direct net-enabled weapons to their targets using data from a wide range of space, airborne and ground/sea-based sensors."[32] Capabilities such as this, or even a military version of an encrypted, interconnected smartphone, would be a light-year improvement to the decades-old Link-16 datalink and other on-board communications systems we rely on currently. Such solutions are badly needed to enhance our analysis and data flows throughout the ISR force.

Conclusion

Current SRO employment must continue to evolve. The United States is committed to competing with China and taking the necessary steps to ensure the Indo-Pacific region remains open and free. SRO is an invaluable tool the theater employs to accomplish these efforts. Not only do these missions provide unique intelligence, but they also generate the critical diplomatic effects of presence and awareness, often used as leverage to achieve our national objectives. To fully realize these missions' benefits, new techniques and integration efforts must be embraced, along with an open mindset regarding SRO's roles.

Armed with this broader perspective, steps must be taken to establish a broader multilateral approach to conducting SRO. Partnering with other nations to embed personnel will increase these missions' legitimacy and send a stronger, more unified message regarding our intentions to protect our collective interests. Proactive, planned, and deliberate strike training, facilitated by SRO missions, will help the United States to more effectively compete, deter, and win against China in the future. Finally, the more effective leveraging of SRO data and enhanced distribution techniques while maintaining the competitive technological advantage is critical to our future success. Combined, these actions will undoubtedly enhance the employment of SRO missions and, in turn, maintain our position of strength in the Indo-Pacific. ✪

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Notes

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