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# IW PERSPECTIVES

## The Vital Role of Airlines and Commercial Aviation in Irregular Warfare

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Commercial airlines and aviation have emerged as a critical yet often overlooked element in the context of irregular warfare (IW). These assets are not just part of a state's infrastructure, but they also significantly contribute to a state's response capabilities. A prime example of this was seen during the [U.S. evacuation from Afghanistan](#), where commercial aviation [extended beyond its traditional role of transportation](#). It played a crucial role in strategic operations and logistics, demonstrating how governments, like the U.S., are increasingly relying on commercial airlines for matters of national security and political significance. In the face of IW threats, commercial aviation's capabilities encompass the ability to rapidly mobilize resources, ensure the continuity of critical services, and maintain the resilience of societal structures.

The use of commercial aviation in IW opens a new possibility for military strategy, reflecting a paradigm where the lines between civilian and military assets blur, offering unique advantages and posing complex ethical and legal challenges. From [rapid troop deployments and evacuations](#) to [covert intelligence gathering](#), the versatility of commercial aviation is indispensable yet fraught with risks that warrant careful consideration.

In preparing for IW threats, commercial aviation emerges as both a potential vulnerability and a strategic asset. The infrastructure, cyber capabilities, and security of commercial airlines are liabilities for states, as they enable attackers to damage civilian infrastructure through methods that are not immediately recognizable as a traditional attack. An attack of this nature will have military, economic, and political ramifications. Fully understanding this threat is essential for preparing for the future of IW.





As such, it is imperative that commercial aviation is given a more integrated role within U.S. national defense. It is a strategic necessity aimed at bolstering national preparedness and responsiveness in the face of IW. It catalyzes innovation in areas pivotal to national security, including logistics, supply chain management, transportation capabilities, and security protocols.

### ***The Strategic Importance of Commercial Aviation in IW***

One of the most critical roles of commercial aviation in IW is providing logistical support. This includes the transportation of military troops, equipment, and supplies, often to remote or challenging locations where traditional military transport may not be feasible or practical. A prime example of this can be seen in the [Civil Reserve Air Fleet](#) (CRAF), which is a cooperative and voluntary program that involves a partnership between the Department of Transportation (DoT), DoD, and the U.S. civil air carrier industry to provide logistical support from civilian airlines during a national defense-related crisis.

Current notable commercial air carriers that are party to the program are [Delta Air Lines](#), [American Air Lines](#), [United Air Lines](#), [Southwest Air Lines](#), and a range of other carriers. While the CRAF has only been activated three times since its creation within [the Defense Production Act of 1950](#), its effectiveness is evident. It was first used in [Operations Desert Shield and Desert Storm](#), then in [Operation Iraqi Freedom](#), and last to help U.S. citizens, Special Immigrant Visa (SIV) applicants, and others [evacuate from Afghanistan](#) in 2021. Under the CRAF, [six commercial airlines were utilized to help transport evacuees out of Afghanistan](#), highlighting the military, diplomatic, and humanitarian aspects of this kind of program.

In fact, according to a [DoD directive effective from 2019](#), the use of commercial aircraft is actively encouraged for missions that can be effectively fulfilled outside of immediate threat or danger. This directive recognizes the strategic value of commercial airlines in non-combat situations. Commercial airlines can serve as a vital tool for the rapid mobilization of units and individuals, and the swift movement of large quantities of resources. They can also provide crucial logistical support in times of need. The DoD's encouragement of their use underscores that the Department recognizes these capabilities and the strategic advantage they offer. Therefore, even in non-combat situations, commercial airlines play an integral role in the operational readiness and response capabilities of the DoD.

Commercial aerial surveillance is another capability that the private aviation industry can offer to augment DoD and other cabinet departments. Commercial aircraft equipped with [advanced surveillance technologies and dual-use security management technologies](#) can monitor communications, troop movements, and even gather photographic intelligence over territories that might otherwise be inaccessible. Commercial aerial surveillance contractors can support national or intergovernmental operations for a low cost. These commercial aerial surveillance providers can assist in missions such as [routine border protection](#), while also providing [data collection and processing](#) of all data that comes off the aircraft. The data collected through these means can offer valuable insight into threat activity and strategies, directly impacting decision making during an IW scenario by providing data such as real-time tracking and monitoring.



However, the ownership and control of this data can be a contentious issue. While the data collected can offer valuable insight into threat activity and strategies, it also raises questions about privacy and security. If not properly managed and safeguarded, this information could potentially be exploited, posing a threat to national security. This was controversially proven during Baltimore's [2016 and 2020 aerial surveillance pilot program](#). Surveillance data from a third party was used to monitor and track imagery data related to cases associated with a list of [high-profile crime categories](#). The incident highlighted the need for clear policies and regulations regarding the ownership, use, and protection of data collected through commercial or private aviation surveillance.

The interconnected nature of global aviation networks fosters international cooperation and collaboration in addressing IW. Nations often rely on shared intelligence, coordinated air patrols, and joint training exercises to counter transnational threats. Beyond military applications, commercial aviation acts as a bridge for diplomatic efforts, promoting partnerships between nations to enhance collective security and response capabilities. The usage of [Air Diplomacy](#), which is defined as a proactive approach to preventing conflict by [empowering airpower in non-kinetic operations as an instrument of power](#), shows how impactful commercial and non-military aviation can be to diplomatic engagement. This approach encompasses aspects such as [humanitarian airlifts](#), disaster response, and [the transport of diplomatic delegations](#). By leveraging the speed and reach of commercial aviation, countries can rapidly respond to crises, deliver aid, and show solidarity in times of need, thereby strengthening diplomatic ties and promoting peace.

The strategic importance of commercial aviation in IW is undeniable, as it provides critical logistical support, valuable intelligence, and fosters international cooperation. However, this relationship also introduces unique challenges and limitations. The integration of commercial aviation into IW strategies brings with it a wide range of potential risks and vulnerabilities. These risks must be carefully considered in a comprehensive IW strategy that views commercial aviation as an asset. This is to ensure that strategic objectives are met without compromising the safety, efficiency, and integrity of commercial aviation operations.

## ***How IW May Affect Commercial Aviation: Challenges and Limitations***

Terrorist attacks using commercial airlines have remained a focus of [security efforts since the 1970s](#). As exemplified in the [2017 Islamic State Sydney Plane Plot](#), the threat of a passenger boarding a commercial airline with highly destructive weaponry such as explosive or chemical weapons is a constant threat. The airport itself is a target as incidents like [the 2016 Zaventem international airport suicide bombings in Brussels](#) or the [2016 Ataturk airport attack in Istanbul](#) demonstrate. Potential threats often target the public areas of the airport, such as check-in and arrival halls, where large crowds gather and security is less intense.

Moreover, a key aspect of defending against IW attacks is ensuring the sanctity and security of airport employees themselves. A number of concerning events such as an [alleged smuggling of cocaine by baggage handlers at LAX airport](#) has brought to light how crucial proper vetting systems are for determining airport employees and illustrates the complexities in countering insider threats, [a](#)



[disruptive tactic in IW](#). Insider threats exploit the access and trust granted to employees to undermine security measures from within, making them a favored IW tactic for bypassing external defenses without detection. Such tactics can facilitate a range of hostile actions, from sabotage to intelligence gathering, significantly complicating the security landscape, and demanding robust countermeasures.

Moreover, supply chains are also a possible threat vector for the aviation industry. The various liabilities present within the commercial aviation industry supply chain. In September 2023, news broke that at least four airlines had unwittingly purchased and used fake airplane parts from [a counterfeit company called AOG Technics](#). This firm is accused of falsifying certain documents and shipping these parts to airline repair companies around the world. Due to the global nature of the commercial airline industry, it is possible that these fake parts could have been integrated into many aircraft.

The supply chains regarding the airline industry are [heavily regulated](#), and documentation precedes every airplane part. However, fragile shipping methods and a lack of specialized human resources impact the aviation industry significantly. If aviation supply chains were intentionally infiltrated or targeted, the impact could be disastrous. Additionally, regulatory laws may differ depending on the region, requiring firms to [maintain their own systems to identify unapproved parts](#) and vet their suppliers.

A significant operational constraint for commercial airlines in the context of IW arises from the advanced use of [cyber-attacks and AI by adversaries](#). [Cyberweapons](#) can be employed to target critical aviation infrastructure, such as air traffic control systems, navigation aids, and communication networks. Specifically, aircraft routers are [a vulnerable piece of hardware within an airplane](#) that could be targeted by an attacker. An effective hack into systems used by commercial airlines could lead to [malfunctioning systems](#) or the [leak of targeted data](#) of business aviation clients, important maintenance records, or critical aircraft sales figures, such as [the Star Alliance hack](#) in 2021 which saw the leak of thousands of passengers' data.

Additionally, the utilization of AI and disinformation could further exploit clients and airline personnel by spreading fake narratives surrounding airline updates. These attacks could be most effective when targeting shocking events such as [falsifying plane crashes](#) and hijackings, or encouraging customers to [contact fake helpdesks to steal personal and flight information](#). Such tactics can create panic, undermine public trust in airlines, and disrupt operations due to increased security concerns and the need for verification of information.

To enhance the effectiveness and resilience of commercial aviation in support of IW, it is imperative to foster deeper collaboration and integration with key government agencies, including the DoD, the DoT, TRANSCOM, and the DHS. By forging stronger partnerships in areas beyond day-to-day operations, the United States can bolster national security and respond more effectively to evolving threats.

Despite foundational partnerships between the DoD and commercial aviation, significant gaps in IW preparedness persist. The current collaboration, including the Civil Reserve Air Fleet (CRAF), falls short in addressing the nuances of irregular warfare. Current efforts in logistics, supply chain management, and cybersecurity, although beneficial, do not fully capitalize on the potential for joint innovation in aviation technology or the comprehensive application of advanced surveillance systems specifically tailored for IW challenges. The existing framework lacks the depth and specificity required



for commercial airlines to effectively assist in complex IW scenarios or humanitarian efforts outside of conventional combat. Enhanced cooperation is crucial, necessitating a strategic overhaul to develop comprehensive, forward-looking strategies that better anticipate and counter future IW threats.

Implementing heightened cybersecurity measures, as recommended in the Federal Aviation Administration's (FAA) [Aviation Cyber Initiative](#), can be a critical area of this collaboration. These enhanced cybersecurity standards will fortify the resilience of commercial aviation against sophisticated cyberattacks and IW threats. The DoD's oversight in reinforcing cyber defense capabilities of airplanes and airport infrastructure should play a significant role in this regard. By ensuring that commercial airlines are equipped with the latest cybersecurity technologies and strategies, they can be more effectively integrated into national response frameworks. This approach will not only bolster the reliability of commercial airlines in IW events but also maintain their status as a vital component of national defense capabilities.

By uniting the expertise and resources of the diverse sectors involved in the aviation industry, the U.S. can significantly augment its collective defense posture when it comes to IW threats in commercial aviation. This constructive collaboration enables a more robust, agile, and adaptive approach to threats, ensuring that aviation infrastructure is not only a component of a national defense mechanism but a formidable asset. Such a strategic alliance ensures that commercial aviation is not just a tool for travel, but an integral part of a comprehensive framework protecting national interests and contributing to global stability. This collaboration is not a choice but a necessity in today's volatile world. It empowers the aviation sector to anticipate, prepare for, and counteract the complexities of IW with unprecedented efficiency and effectiveness. Through collaboration, these entities can ensure that the U.S. remains a step ahead in safeguarding not only its skies, but also its global standing and security.



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