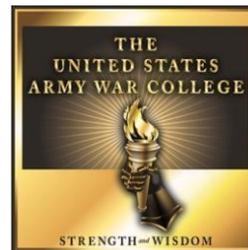# FAA: An Undervalued Combat Multiplier

by

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   Though the Department of Defense (DOD) serves as the lead for the USG to apply military power, it relies on the Federal Aviation Administration (FAA) to plan for the most efficient and safe assurance of its Civil Reserve Air Fleet (CRAF) and to work with partners to defeat any efforts at counter-air navigation. The changing character of war in the 21st Century, where the United States (US) remains in a perpetual state of armed conflict against non-state or state-sponsored armed opponents, requires a more integrated approach for the FAA and other federal organizations to address national security. Over the past several decades, the FAA showed adaptation and resiliency to meet emerging challenges and threats. However, the United States Government did not envision the FAA's roles and responsibilities in perpetual conflict, as experienced since September 11, 2001. Through reorganization, appropriate funding, adaptive planning, and policy updates in global aviation development, the FAA can more adequately support the nation's national security effort.

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FAA: An Undervalued Combat Multiplier

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FAA: An Undervalued Combat Multiplier

The year is 2025, and the United States Government (USG) determines that it will no longer tolerate Iran's failure to abide by the 2013 Joint Comprehensive Plan of Action (JCPOA). As the US builds a coalition to either coerce Iran to comply with the threat of military force or actual attack, military and civilian planners realize that much has changed since 2003, the last time the US moved large land and air forces to the region for Operation Iraqi Freedom. In contrast, planners can no longer assume air dominance in, and around, Iranian airspace nor can they expect the free flow of air commerce in the region. Iran learned from the US' reliance on civilian and air mobility to rapidly move troops, supplies, and equipment into the area. Planners must now assume that Iran will attempt to impede the US and Coalition Partners' air logistics effort through hybrid warfare, non-attributable directly to the Iranian State. Hezbollah, other Iranian-sponsored groups, and cyber operators will use every instrument at their disposal. Tools include terrorism, Man-Portable Air Defense Systems (MANPADS), cyberattacks, armed commercial unmanned systems, Global Positioning System (GPS) false signaling, and denial to disrupt the planned, synchronized, and comprehensive force deployment effort before full hostilities occur.

Though the Department of Defense (DOD) serves as the lead for the USG to apply military power, it relies on the Federal Aviation Administration (FAA) to plan for the most efficient and safe assurance of its Civil Reserve Air Fleet (CRAF) and to work with partners to defeat any efforts at counter-air navigation. Additionally, DOD integrates the FAA before, during, and after hostilities. While hypothetical, the scenario demonstrates exactly the type of future challenges that necessitate close partnership between the FAA and other Departments as it applies to national security policy. These trends transcend the norms through which Congress established the FAA's structure during the Cold War.

The changing character of war in the 21st Century, where the United States (US) remains in a perpetual state of armed conflict against non-state or state-sponsored armed opponents, requires a more integrated approach for the FAA and other federal organizations to address national security. Throughout its history, the FAA provided services and oversight to support the USG's strategic ends. Specifically, the

sustainment of forces and government entities in a conflict zone often requires a

primarily contracted air commitment for the DOD.[1] The FAA's statutory responsibility to

provide for safe civilian air commerce can limit DOD logistics flow and inhibit necessary

civilian air traffic into, and out of, these theaters. Also, after destroying or marginalizing

a nation's aviation infrastructure during warfare, the US frequently re-establishes and

rebuilds the processes, procedures, and regulations to make air flight viable in that

country or region. With these two functions, the FAA plays a crucial role in the USG's

strategy in conflict or combat zones.

The FAA altered structure and processes since September 11, 2001. However,

three additional key changes will enhance its ability to support future strategic

endeavors. First, the FAA should modify its organization, with appropriate funding, to

conduct more adaptive planning, aligned with national strategy. Second, the USG

should incorporate the FAA better into its operational and strategic planning,

wargaming, and rehearsal process. Third, the USG should alter its policy regarding

aviation development with foreign governments. With some transformation, to include

help from Congress and the Executive Branch, the FAA can more adequately support

the nation's national security effort.

The country's last declaration of war occurred in 1941; however, the US has

pursued military solutions to multiple conflicts around the globe since World War II. As

the USG acts globally to achieve strategic goals, often without purely military solutions,

integration and coordination of federal agencies increase in importance. The USG

established multiple institutions in the aftermath of World War II. While these

organizations met requirements for the previous 70 years, the changing nature of the

global environment requires revision and modification to their organizational structure to achieve strategic ends. The FAA presents one such example of a government agency that shows resilience and adaptability but must address changes to meet the challenges of the evolving nature of military intervention.

Since September 11, 2001, the US found itself perpetually engaged in armed conflict against transregional Islamic extremists, often in Outside Declared Theater of Active Armed Conflict (ODTAAC) locations. Though the US pursued other military operations in its history without a war declaration, the George W. Bush and Barack Obama administrations expanded military action in ungoverned or non-traditional conflict areas to counter violent extremist threats. These activities enabled the US military and Central Intelligence Agency (CIA) to attack non-state actor adversaries in locations where a government does not exist, fails to act, or cannot effectively counter the menace.

FAA Organization to Meet National Strategy

FAA Statutory Organization, Roles, and Responsibilities

Signed into law August 23, 1958, by President Dwight D. Eisenhower, the USG established the FAA under the Federal Aviation Act of 1958.[2] Supported by the Legislative and Executive Branches, leaders recognized the emerging prominence of aviation. Moreover, Congress understood the requirement to bring standardization and safety to commercial aviation in the United States. Several accidents involving multiple fatalities and aircraft losses underscored the need for such an agency. Though endorsed by the President as a new part of the Executive branch, Congress believed that the legislation "create[d] an independent air agency free from the Executive

Department's control and directly responsible to Congress."[3] As with other federal agencies, the President appointed the Director with Congressional consent.[4] While the Federal Aviation Act obligated the FAA to conduct activities that focused on safety and standardization in the United States, it stipulated that the organization maintain oversight of all US air carriers, regardless of location. Title XI, Section 1110 of the Act applied to the delegated extension of authority outside of the United States.[5] The Act included legal jurisdiction, organizational structure, provisions for a separate investigative board, air carrier economic regulation, aircraft, and aircrew licensing and other requirements.

The Federal Aviation Act of 1958 created the FAA Director and Deputy Director positions. Other than expressly directing military participation, the Act provided vague language that further organized the new bureaucracy. According to Title III, Section 301, "The Administrator is authorized to appoint such advisory committees as shall be appropriate for the purpose of consultation with and advice to the Agency in the performance of its functions."[6] Section 303 authorizes the Director to "make such expenditures at the seat of government and elsewhere as may be necessary for the exercise and performance of the powers and duties vested in and imposed upon him by law…"[7] The Act does not restrict the number or type of personnel. Similarly, it does not detail the number or type of divisions or directorates that reside within the FAA. Thus, it provides considerable latitude to the Director to allocate resources and organize, given his or her budget. Over time, Congress modified the FAA's statutory requirements, using FAA reauthorization and appropriation bills. For example, the FAA Modernization and Reform Act of 2012 included provisions for regulating unmanned aerial systems

and contending with the growing threat of lasers, aimed at aircraft.[8] Vague language in the original 1958 Act directed the FAA to comply with international treaties and obligations. Part V of the 2012 Reauthorization Act included the first text that specifically covered international aviation.[9] Given the recent expansion of FAA roles abroad, Congress identified the need to add such language. However, the FAA's series of reauthorization acts did not constrain the Director in organization. Thus, the FAA retains considerable autonomy to organize, according to requirements.

The FAA holds organizational authority and adjusts to meet expanding roles. However, it lacks some necessary structure to meet USG strategic ends. Such structural changes would occur from a renewed additional emphasis on the Administration's effort outside the US. Since World War II, the DOD relied on civilian air carriers to deliver troops, equipment, and supplies to conflict zones. During World War II, commercial air carriers delivered millions of troops and hundreds of millions of tons of supplies at a time when the US lacked military air cargo capacity to meet demand.[10] During the Berlin Airlift in 1948, US commercial airlines demonstrated a model of support to the DOD that the US would use in subsequent conflicts. Commercial aircraft did not make the final leg to West Berlin but delivered vital supplies from the US and Europe. In almost 280,000 missions, US air carriers delivered over 67% of the cargo. This movement supported President Truman's effort to keep West Berlin supplied and democratic, despite attempted strangulation from the Soviet Union.[11] Operations during World War II, Korea, and the Berlin Airlift demonstrated the need for contracted air logistics for military operations. This necessity caused the Congress to establish the Civil Reserve Air Fleet (CRAF) in 1952. CRAF enabled the DOD to respond to domestic

and global emergencies with personnel and supplies.[12] It provides the DOD with a contract mechanism. It hires airlines and cargo carriers to move personnel and cargo in support of military operations during national emergencies in conflict and combat zones. When not activated, DOD contracts with CRAF partners before it charters non-CRAF carriers. Additionally, the Fly CRAF Act requires DOD to use CRAF carriers to contract airlift services whenever they have the capacity.[13] In 2012, CRAF carriers provided 61% of the USTRANSCOM missions worldwide.[14]

During CRAF's establishment, the USG recognized its military airlift capacity fell short of its requirement, as it prepared to fight conflicts around the world. This enterprise provided a more efficient means to boost capacity without capital and sustainment costs of more aircraft, maintainers, and aircrew. As recently as 2009, USTRANSCOM stated that "during a period of national mobilization, CRAF would meet approximately 93 percent of DOD's passenger and about 37 percent of DOD's cargo requirements."[15] The USG activated the CRAF only twice in its history, in support of Operations Desert Shield/Desert Storm and Iraqi Freedom. However, the DOD contracted CRAF vendors in multiple other conflicts, including Korea, Vietnam, and most recently in Iraq and Afghanistan.[16] As an incentive for contractors, the DOD prioritizes its approximate 2.5-billion-dollar annual air charter requirement to CRAF members.[17] Though not officially activated, CRAF contractors supported other efforts in Central and South America to move DOD personnel and equipment. These packages supported military training, partnerships, counter-insurgency, and counter-narcotics operations.

Without the CRAF during Operations Desert Shield/Desert Storm and Iraqi Freedom, the DOD could not move the required number of people, tons of equipment,

or supplies to meet the USG's strategic force development timelines. During this deployment effort, US CRAF aircraft averaged over 70 flights per day from the US to the Middle East and roughly 3600 tons per day during the peak deployment month.[18] The CRAF can mobilize an additional 416 commercial airplanes for international operations, while the DOD limits its cargo and personnel carrying capability to approximately 360 military aircraft.[19] The DOD's total aircraft number does not account for those airframes unavailable due to maintenance. DOD average operational readiness rate goals of 75 percent reduce this number to approximately 270 available aircraft at any one time. If required to service a major theater war, the USG could assemble to "Stage Three," providing 453 large passenger and cargo airplanes.[20] During Operation Desert Storm, CRAF Stage Two aircraft and other volunteered contractors transported roughly 60 percent of all passengers and 25 percent of all air cargo.[21] Below, Table 1 displays the current CRAF allocation, by type of service.

Table 1[22]

Segment	Type Service	# of Aircraft
	Passenger	147
International Long-Range	Cargo	130
	Passenger	134
International Short-Range	Cargo	5
National Domestic Services	Passenger	1
	Cargo	36
Total Aircraft		453

Table 2 shows the criterion to mobilize each CRAF stage within 24-48 hours.

Table 2[23]

Aircraft Stage	I	II	III
Purpose	Minor operations or adequate preparation time	Major theater war, requiring rapid force deployment	National mobilization

The DOD uses its military and CRAF aircraft for personnel and cargo transport worldwide. In a period of crisis, the DOD must increase its support to a particular geographic area, while continuing support to other global commitments. Unlike the CRAF, the DOD performs specialized and higher threat missions with its military aircraft, such as airborne operations or the final flight segments into areas with an adversarial anti-aircraft threat. As shown during Operations Desert Shield/Desert Storm, Iraqi Freedom, and Enduring Freedom, the DOD must use its military cargo aircraft to conduct the final leg of flight for its air logistics train. This condition further limits military cargo aircraft to intra-theater lift only. Below, Figure 1 shows the way in which the DOD delivered personnel and materiel with commercial airlift during the initial phases of Operations Iraqi Freedom and Enduring Freedom. Civilian aircraft flew legs, shown as the blue arrow, from the US and Europe to Kuwait, Oman, Saudi Arabia, and other allied Aerial Ports of Entry (APOE). These APOEs served as intermediate transfer locations. Military aircraft, shown by the black arrows, delivered personnel and materiel into Iraq and Afghanistan. Specialized technical survivability equipment, military trained aircrews, and other combat aircraft protected military flights in a way, not accessible to civilians. This arrangement significantly allowed the DOD to increase its air logistics capacity. With contracted and military airlift bolstering the force deployment for conflict,

the DOD maintained additional air logistics in other theaters, such as PACOM and SOUTHCOM.

Figure 1

Standardization and safety oversight of civilian air operations

While the DOD contracts civilians to provide logistics to combat forces globally, it relies on the FAA to standardize and assure the safety of those commercial air

operations. Through the Wendell H. Ford Aviation Investment and Reform Act, signed

by President Bill Clinton in 2000, the administration manages and monitors the airspace

and air traffic system within the United States.[24] Through the United Nations'

International Civil Aviation Organization (ICAO), it coordinates with foreign governments

to assure standardization and safety internationally. This coordination also enables

global air transit by military and civil aviation. By law, the FAA issues civilian aircrew

certificates, registers aircraft to US companies, and validates airworthiness on all US

flagged air carriers.[25] These global responsibilities make the FAA uniquely qualified,

resourced, and accountable for commercial air operations. No other agency,

administration, or department within the federal government possesses the necessary

expertise. The Federal Aviation Act of 1958 addresses the FAA Director's

responsibilities, including airspace control for civil and military operations, with safety as

the paramount consideration.[26] The FAA Director may administer rules and regulations

to that end. While the DOD produces its aviation norms and standards, military aircrews

operate with similar ground rules, especially during routine, non-combat operations, as

prescribed by the FAA. While some might argue for the DOD to assume FAA

standardization and safety responsibilities abroad, especially during conflict, such an

arrangement would require FAA experts to move to the DOD. A resulting structural and

personnel change would neither make DOD or USG operations more efficient nor

effective.

Non-state actor challenges to FAA standardization and safety

Historically, the FAA provided the mechanism to partner with the DOD to meet its

air cargo and personnel movement needs. Despite evolving methods to fight wars, the

close FAA and DOD relationship will remain crucial. With increasing tensions between the US and China, Russia, and expanding conflict zones throughout the Middle East and Africa, one cannot see a time when this bond would diminish. While a full conventional war with a state-actor seems unlikely in the near term, the USG must remain ready to respond to such a crisis, where the FAA and CRAF would support that effort. However, emerging forms of warfare create the need for additional preparation. ISIS, though a non-state actor, performs state-like functions in ungoverned areas. Unlike states, they do not follow traditional state norms. They do not respond to international pressure through the United Nations (UN), abide by the law of armed conflict, follow the Geneva Convention, nor do they act with restraint, based on a rational model. The US military estimates that ISIS used chemical weapons 52 times since 2014, weapons abhorrent to the civilized world and prohibited by the Geneva Convention.[27] ISIS' attack on a Russian Metrojet airliner in 2015, full of civilian passengers, provides additional evidence that the transregional organization will employ any weapons or methods necessary to induce terror, compel compliance, and challenge international norms.[28] In addition to targeting civilian passenger aircraft with MANPADS and other traditional weapons, the organization used emerging technology, such as Unmanned Aerial Systems (UAS). In juxtaposition to historic threats to aviation, such as hijacking, bombing, or direct fire, we can deduce that the group will employ any available means or technology.

Russia's employment of what experts describe as "hybrid warfare" provides another example where the FAA remains limited in methods to enable the safe, free flow of air commerce. *The Military Journal* defines hybrid warfare as, "the use of military

and non-military tools in an integrated campaign designed to achieve surprise, seize the initiative and gain psychological as well as physical advantages utilizing diplomatic means; sophisticated and rapid information, electronic and cyber operations; covert and occasionally overt military and intelligence action; and economic pressure."[29] Military scholars state that hybrid warfare does not constitute a whole new form of fighting. Nonetheless, the USG and FAA established processes and systems to support the military to combat foes in a conventional, nuclear, or unconventional conflict.[30] In the past 50 years, the USG did not account for hybrid warfare nor a non-state actor functioning as a state without bounds. These emergent conflict paradigms drive supporting entities like the FAA to adjust their thinking, planning, and structure. These progressing patterns require additional consideration and modification.

War Risk Insurance

War risk insurance provides an additional area where the FAA manages a program for the DOD. In a 1951 law that amended the Civil Aeronautics Act of 1938, Congress broadly authorized the Secretary of Commerce to offer protection in the form of financial indemnification to US and foreign-based air carriers. In 1951, the FAA did not exist. The Department of Commerce provided aviation standardization and policy, albeit inadequate. Though the Secretary of Commerce retained wider latitude to offer insurance for non-war related losses, he limited insurance policies to those with "war risk."[31] Upon establishment, the FAA carried this provision forward when it formed in 1958, according to 49 US Code.[32] In establishing the program, Congress certified the FAA to create a fund, from which only the FAA could pay claims. Though it provided only war risk insurance, the Administration had the latitude to offer general aviation

insurance. It never adopted a policy to expand to general insurance, preferring that the commercial insurance industry provides such coverage. Though not exclusive to the DOD, the FAA insured only one non-DOD flight for war-risk since inception. This flight supported a Department of State (DOS) evacuation from Somalia in 1993.[33] During that event, the FAA insured only the flight out of Somalia, not additional flight segments outside of Somali airspace. War risk covers only threat-induced mishaps or losses, such as direct missile fire, a terrorist attack, or direct anti-aircraft fire.

Typical of the type of indemnification offered by the FAA before the events of September 11, 2001, the FAA limited its war risk coverage, providing for only specific routes or flights and only in contested or higher risk airspace.[34] For example, the FAA issued war risk insurance for 111 flights to Tuzla, Bosnia, in 1996.[35] Though the USG did not activate CRAF, it required commercial airlines to move people to Bosnia to operate in peacekeeping operations. Commercial insurers would not provide this insurance, deeming the environment and airspace too hazardous. In the past decade, only flights within the Central Command (CENTCOM) or Africa Command (AFRICOM) areas of operation qualified to receive war risk insurance.[36] The FAA does not currently assess airspace and the operating environment in the other geographical locations as dangerous enough to warrant this coverage.

The events of September 11, 2001, changed the world in many ways, but they completely altered the civilian aviation industry and the way in which the USG interacted with it. With little exception, the commercial insurance industry covered the bulk of US airlines before the terrorist attacks, including operations in support of the USG. Immediately following September 11th, the insurance companies lost over six billion

dollars. The industry responded, canceling many policies. The President and Congress acted to avoid complete cessation of commercial service, authorizing and directing the FAA to provide premium war risk insurance broadly across all of the airline companies. The FAA extended war risk insurance policies to domestic and international routes until 2014. The insurance industry recovered within the decade, and it resumed providing coverage. In 2014, the FAA urged Congress to encourage the commercial insurance industry to assume its traditional role once again.[37] It is important to note that the FAA's war risk insurance covers only those events where enemy action directly causes damage or catastrophic loss. Should an aircrew destroy an aircraft due to human error or negligence, even in a conflict zone, the FAA's war risk insurance would not indemnify that act.

Since 2014, the FAA returned to its pre-9/11 role of providing non-premium war risk insurance only to DOD-contracted flights and carriers in contested areas. As of 2016, 27 different carriers received this coverage, including CRAF partners, and other fixed, and rotary wing contractors.[38] Service to these airlines includes not only insurance, but frequent communication, intelligence dissemination, and integrated risk management to provide safe, efficient air service. Through the collection of premiums and fees since inception, the FAA's war risk insurance fund totals approximately 2.2 billion dollars. According to Mr. Wayne Heibeck, one of the key war risk insurance administrators at the FAA, this amount remains sufficient to cover commercial and non-premium DOD claims related to war risk clauses.[39] In fact, over the past decade, the FAA paid an average of 10 to 12 claims per year. Most of those claims consisted of minor small arms sheet metal damage, with relatively low payouts. Its two largest claims

resulted from the loss of two DOD-contracted rotary wing aircraft in Afghanistan.[40] Once again, this insurance covered only losses resulting from particular war risk acts, not all events or conditions. Contractors purchase private insurance to cover other incidents.

While the insurance industry recovered from its setback on 9/11, the FAA provided war risk insurance for DOD-related contractor aviation operations in contested areas. The FAA acknowledges the importance of war risk insurance to enable DOD-contracted aviation support in conflict zones. However, because virtually all of these operations occur in support of the DOD, some experts in the administration advocate shifting the program to the DOD for management and administration.[41] After some consideration, such a change would not capitalize on the FAA's subject matter experts and would require a transfer of that human capital. Furthermore, the FAA maintains relationships with commercial air partners in a way that is unique to its statutory roles and responsibilities. One example highlights the FAA's customer service orientation on war risk insurance. Through an unintentional lapse in required annual renewal of a policy, the FAA's war risk insurance managers developed a system to provide forecasted timelines to prevent service interruption.[42]

Recommendation 1: Retain war risk insurance fund management

The FAA maintains exceptional roles in safety and standardization by statute, not easily transferable to other Departments. Similarly, the DOD relies on the FAA, with its insurance experts, to administer the war risk insurance program. Though the DOD could hire similar civilian specialists and managers, it relies on the FAA to employ industry experts. These experts have experience in the aviation insurance business, monitor the industry, and work with providers to maximize this obligation to DOD contractors.

Commercial aviation relationships, expertise, oversight, regulation, and focus reside within the FAA. The Administration should retain this function and seek ways to ensure its solvency and effectiveness.

Experts for Reconstruction and Stabilization

While the FAA continually provides infrastructure and people who administer the war risk insurance program, the wars in Afghanistan and Iraq in the wake of the attacks of September 11, 2001, added a new, non-statutory requirement. The FAA interacted with and trained international partners since inception, but it did not maintain an organization to respond to national crises involving aviation.[43] It had an International Operations Directorate (IOD), responsible for coordinating with foreign partners and the UN's ICAO. Recent US wars incurred a significant post-conflict reconstruction requirement. The FAA found itself involved in this effort.

Historically, the IOD provided assistance to foreign partners and governments. For example, a series of air traffic control incidents in the late 1990s in South Korea brought US experts to intervene. Hazardous interaction among civilian aircraft, South Korean military aircraft, and air traffic control operators enticed the South Korean government to request US FAA expertise to analyze and make recommendations to adjust procedures to improve safety. In an interagency effort, the DOD and FAA sent experts to the Republic of Korea. The South Koreans listened and subsequently modified their system, better integrating civilian and military flights into the infrastructure and substantially increasing safety throughout the country.[44] Another example in Israel demonstrates this capability. Israel established its *Iron Dome* anti-rocket/missile system in 2011 to counter threats from Hamas and Hezbollah rocket attacks. After significant

concerns for the safety of US and international civilian aircraft, the FAA sent experts to Israel. FAA specialists recommended procedures to facilitate air traffic while enabling successful *Iron Dome* operations. This coordination alleviated international concerns and maintained the free flow of civilian aircraft in Israeli airspace.[45] Both examples demonstrate that this type of expertise transfer works in stable nations with existing capabilities.

After September 11, 2001, the FAA identified a major homeland security requirement to respond to crises involving flight, similar to its action in South Korea and Israel. The Administration established the System Operations Security Directorate (SOSD). Within the FAA, the SOSD hired a preponderance of technical experts with aviation air traffic control and infrastructure management.[46] This Directorate also includes Liaison Officers (LNOs) to several DOD major commands, including Northern Command (NORTHCOM), Special Operations Command (SOCOM), Pacific Command (PACOM), and North American Aerospace Defense Command (NORAD). Though the US fought its conflicts primarily across the European Command (EUCOM), AFRICOM, and CENTCOM theaters, the FAA does not place LNOs in those major commands. Furthermore, when it established the SOSD, the FAA created the Directorate out of its existing budget.[47] FAA leaders recognized the need for such an organization due to emerging homeland defense threat, but no act or statute created it.

The SOSD maintains professionals on alert to respond to crises within the US. Uniquely experienced and qualified, SOSD's personnel provide a valuable resource that allows the FAA to respond rapidly to emerging challenges. These people have experience assisting with development and conflict resolution in other nations. However,

the FAA's IOD does not provide similar crisis response. The FAA charges the IOD to coordinate and partner with foreign governments and entities. Among other roles, this Directorate focuses its attention on international flight routes, compliance with ICAO procedures, coordination to standardize aircrew and aircraft certification. Historically, it also developed training programs and peacetime partnerships with foreign governments. Nations, such as Nigeria and Haiti, benefited from this effort. Though the FAA has the right capability to administer such associations, it does not have the same expeditionary capability, similar to homeland response in the SOSD.

Recommendation 2: Increase SOSD's portfolio to respond to crises abroad in addition to those in the US

While adjusting to changing conditions after 9/11, the FAA lacks an entity to coordinate, integrate, and plan for foreign crises and their aftermath. This shortfall does not mean that the FAA fails to coordinate with the other Departments, but there is no subordinate organization focused on this explicit requirement. The SOSD maintains the necessary expertise, yet focuses on domestic issues. In contrast, the IOD concentrates its effort on policy and guidance versus execution. Between these two important FAA elements arose a demonstrable capability gap. The FAA should reorganize to provide an appropriate emphasis on national strategy outside the United States, particularly in conflict or post-conflict zones. Three options exist to address this shortfall. Option one includes legislative language on the next FAA Reauthorization Act, along with funding, providing the responsibility and authority to the IOD. In fact, a Bush National Security Presidential Directive (NSPD), NSPD-44, required the different Departments, including the Department of Transportation (DOT), to "identify and develop internal capabilities for

planning and for resource and program management that can be mobilized in response to crises."[48] Option two includes creating a new Directorate, focused on the FAA's role in developing plans, options, and expertise with the other Departments to meet strategic goals. Under this option, the IOD would focus its attention on current operations and execution. A new Directorate would focus its attention on planning, strategy, and foreign partnership to meet strategic goals. Drawbacks to this option include additional bureaucracy, potentially increased manning, and management inefficiencies. Option three distributes external strategic planning and response to the SOSD, though this could require a larger cadre of personnel. The FAA would empower the SOSD to increase its portfolio to include global challenges. Such a change may or may not include additional staff. However, it would consolidate rapid response training, experience, and expertise. Drawbacks include diluting focus from homeland defense and a shift of concentration from IOD to SOSD. As the FAA's role in conflict and post-conflict areas continues, the FAA should clearly lay out the costs to the Office of Management and Budget. Absent from FAA reauthorization bills, foreign involvement and partnership require explicit language in subsequent legislation. The verbiage in statute would address the increase in structure and costs to meet growing requirements.

Planning, Wargaming, and Rehearsals

Historical Lack of FAA Inclusion in Planning

In addition to increasing its focus on crisis response globally, the FAA should modify its manning or change structure to enhance its support to national strategy. In 2003, President Bush's National Security Council and the DOD failed to include the FAA

or DOT in Iraq reconstruction planning. Initially issued and classified in January 2003, NSPD-24 directed various Executive Departments to assist the DOD with planning for post-combat reconstruction and stability. This directive did not include the DOT or FAA in distribution.[49] NSPD-24 directed the DOD to plan for two requirements directly related to future FAA needs. First, Executive Departments must "assist with re-establishment of key civilian services."[50] Second, it directed the recipients to "facilitate the country's reconstruction and protection of its infrastructure and economy."[51] Though the DOT and FAA anticipated the coming conflict, no National Security Council (NSC) document guided the Administration or the DOT. Until just weeks before combat, the DOD's planning team notably excluded coordination and planning for post-war Iraq with the FAA.[52] Whether an oversight or deliberate, the DOD can benefit from the FAA's integration for operational preparation.

In 2003, DOD joint doctrine existed that broadly described the DOT and FAA's interests, relationships, roles, and responsibilities in interagency coordination and planning. However, this doctrine failed to capture some of the FAA's functions and responsibilities, already in progress in Iraq and Afghanistan. For example, this manual neglected to mention international aviation development, though FAA experts performed that role in both theaters.[53] Joint Publication (JP) 3-08, published in March 2006, specifically mentions the FAA's interest in "airspace control and certification of expeditionary aviation facilities overseas during military contingency operations."[54] However, the doctrine did not discuss other critical components of this relationship and work until 2016, in JP 3-08's revision. In Annex O to Appendix A of this JP, the Joint Staff recognizes many of the FAA's requirements for future planning efforts and

contingency operations, as laid out in this paper.[55] Additionally, JP 5-0, the primary DOD

document that describes planning, makes multiple references to interagency planning.[56]

DOD planners, whether civilian or military, should look to JP 3-08 during the planning

effort to gain additional insight into more detailed interagency coordination, including

with the FAA.

The NSC recognized the need to integrate the FAA as well. NSPD-24 highlighted

a greater problem with the inclusion of the FAA in national strategy, planning, and

execution. The FAA's roles abroad are diverse and global. Its statutory requirements to

maintain safe, efficient air commerce inevitably intertwine the Administration in strategic

ends, especially in conflict or contested zones. However, DOD and NSC planners and

strategists omit the FAA from much of the strategic discussion, potentially due to a lack

of knowledge of their value or through oversight. The FAA attempts to mitigate some of

this shortfall with Liaison Officers (LNOs) at key DOD locations. It places LNOs at major

DOD commands, such as NORTHCOM, SOCOM, and PACOM. However, it places no

personnel at the Southern Command (SOUTHCOM), CENTCOM, AFRICOM, or

EUCOM. Furthermore, it maintains no LNO at the DOD's Joint Staff in the Pentagon.

With no representation at these important headquarters, the FAA loses insight into, and

awareness of, plans for conflict. These operational plans range across the spectrum

from humanitarian assistance to full conventional warfare. This condition directly results

in the FAA reacting to, instead of proactively influencing, critical air movement planning.

A lack of FAA coordination eliminates important considerations for airspace, air

infrastructure, logistics support, air commerce, and post-conflict stability within theaters

of combat. As with most organizations, additional, permanent LNOs at some of these

critical locations requires manning sacrifices. The FAA could create efficiencies by establishing a small team of LNOs, who travel to these geographical and functional commands on an as-needed basis.

While no LNOs exist to integrate into planning with DOD in places like the Middle East and Africa, the FAA integrates into homeland planning, operations, and exercises with NORTHCOM. The SOSD maintains a ready-alert pool of technical and tactical experts. This team plans, practices, responds, and fully integrates with national teams from throughout the DOD and other Departments.[57] The SOSD reviews and influences homeland crisis response plans, laying the groundwork for more seamless commercial aviation service to the public and the USG.

Recommendation 3: Dispatch LNOs and International Planning Capability

The FAA should produce a group of LNOs to interact with DOD's Joint Staff, Central Command, Southern Command, Africa Command, and European Command. LNOs need not position full time in these commands, as such an arrangement would create manning challenges for the Administration without consistent gain. Additionally, a permanent LNO would experience atrophy in planning skills and up-to-date knowledge on critical aviation issues. LNOs that travel and integrate into key planning efforts would better complement COCOMs' plans and crises responses to consider aviation nuances, roles, and responsibilities.

Intelligence

Al Qaeda's attacks on September 11, 2001, drastically changed the Intelligence Community (IC), its structure, and methods. Similar to the SOSD's support, intelligence gathering and analysis represents an additional area where the FAA demonstrated

adaptability. No statutory requirement exists for the FAA to have an intelligence apparatus, but the Administration created its Intelligence Analysis and Threat Division before Al Qaeda's attacks. Customers included the FAA and its leaders, foreign partners, the aviation industry, and other Executive Branch Departments, who have an interest in civil aviation. From its inception, this Division integrated with the IC. Its personnel, who had vast intelligence experience, maintained IC relationships and access to information.[58] In fact, the 9/11 Commission Report noted that the FAA placed intelligence LNOs within the CIA, Federal Bureau of Investigation (FBI), and DOS to effect a positive flow of information between the IC and the FAA.[59] Before September 11, 2001, the FAA's Intelligence Division consisted of 42 individuals, including its LNOs.[60] When the Homeland Security Act of 2002 transferred some FAA responsibilities, including airport security, to the Transportation Security Administration (TSA) and Homeland Defense Department, the Intelligence Division provided the nucleus for the TSA's new security directorate.[61] This transfer reduced some responsibilities from the FAA and FAA intelligence capacity by almost 75% to 12 individuals. However, the FAA asserts that this provides the necessary capability for its intelligence needs.[62]

This Intelligence and Analysis Division does not hold any Title 50 collection authorities, but it retains the ability to request information from the US IC and does so easily.[63] Its intelligence specialists interact daily with the IC through VTCs, teleconferences, and face-to-face working groups. They have access to each of the three levels of classified automated systems within the FAA headquarters. They have the ability to push classified information to FAA remote locations in the United States

and other nations. With few exceptions, these intelligence professionals rapidly gain access to the data that they request.[64] They have the ability to request intelligence informally or formally and, to reduce bureaucracy, they request data directly from intelligence agencies rather than formally requesting through the Office of the Director of National Intelligence (ODNI).[65] This Division provides intelligence and analysis to the FAA's other divisions and its leadership. It plays a significant role in enabling the FAA's leaders to issue warnings, change aviation regulations, and statutes.

Though the FAA modified and improved its intelligence processes to meet new requirements, it was not immune from events and challenges that cause continued adaptation. When Russian separatists in the Ukraine shot down Malaysian Airlines Flight MH17 in 2014, it created a ripple effect throughout the USG and the FAA. Though Flight MH17 did not originate as a US carrier, any threat to the free flow of air commerce and civilian air traffic causes second-order effects. Such an event causes a decrease in the flying public's confidence, increases insurance rates, affects the ability to deliver air logistics with civilian aircraft, and affects future risk decisions.[66] Third-order effects occur with increased costs due to circumventing higher threat areas or increased flight time. Congress solicited data, directing the FAA to review its processes to determine how it could prevent such an event in the future, even with a foreign carrier. This event, while tragic, resulted in increased cooperation within the aviation industry, shared intelligence with international partners, and an in-depth review of contested areas. The shoot down caused the IC to pay more attention to open-source social media, perhaps the most significant modifications.[67] Social media portrayed the existence of Russian Surface-to-Air (SA)-11 systems in Crimea, but the FAA did not

receive this intelligence in formal reporting. The FAA issued a Notice to Airmen

(NOTAM) that caused US air carriers to avoid this airspace, based on the threat of

shoulder-fired SA missiles, not due to the existence of the Russian SA-11. Ukraine

issued a NOTAM up to 30,000 feet, which protected aircraft from MANPADS, but not

the SA-11. A NOTAM to 30,000 feet would maintain civilian jets safely above the

shoulder-fired SA threat, but not so for the larger, vehicle-mounted SA-11. Through a

traditional partnership with ICAO and the Ukraine, FAA specialists believe that they

could have influenced the Ukrainians to modify their NOTAM, causing air traffic to divert

from the contested airspace. Incorporating social media or open source dissemination

within the IC might have prevented this event.

To support the DOD and USG's effort, the FAA's intelligence and Special Federal

Aviation Regulation (SFAR) process adapted in other ways. Another example illustrates

this point. In 2009, when President Obama announced a surge of US military forces to

meet goals in Afghanistan, the FAA received intelligence about credible anti-aircraft

threats to civilian aircraft that led decision-makers to issue a NOTAM. The FAA began

the process to implement a SFAR, which would have restricted contracted flights into

and out of Afghanistan.[68] At the time, no waiver process existed for SFARs. Sponsored

by the DOT, SFARs appear annually in the Code of Federal Regulations, essentially

making them USG policy and statutory for entities governed and monitored by federal

agencies. Such a SFAR for Afghanistan would have severely impacted the DOD's ability

to move personnel, equipment, and supplies into Afghanistan using civilian aviation.

Before this case, SFARs remained stringent. This SFAR would have forced the DOD to

complete all final flight legs over Afghan airspace with military cargo airlift, already in

short supply. Military airlift also supported operations in Iraq, Africa, Asia, and other zones of conflict throughout the world. DOD did not concur with the FAA's assessment and worked to prevent the SFAR's adoption.

After significant coordination with the DOD and commercial carriers, the FAA reached an accommodation with an in-depth review of intelligence and risk mitigation. It did not implement the SFAR after the DOD provided sufficient risk reduction measures. Following the inter-departmental dispute, the FAA developed a waiver process, where the FAA and DOD can better analyze specific flight operations to support the strategic effort in conflict zones.[69] Using this process, the DOD must still prove risk mitigation and state the reasons to accept a higher risk to civilian air operations. The FAA retains the authority to approve the waiver, adhering to its core function to maintain civilian aviation safety and security. This example demonstrates an additional way, where the FAA reacted to DOD customer requirements to produce a pragmatic solution, while still adhering to careful risk management.

Of note, should intelligence compel the FAA to assess a significant risk to commercial aviation by statute, it must act to mitigate the risk through mechanisms, such as SFARs. Civilian aircraft do not have military countermeasures nor do they have military aircrews. Military crews must fly into high threat airspace or airfields if commanded. During the opening phase of Operation Iraqi Freedom and the recent conflict in Syria, intelligence induced the FAA to produce SFARs that prohibited any commercial air traffic in those nations' airspace.[70] [71] Given careful intelligence analysis, the other USG Departments did not disagree with this temporary restriction.

Recommendation 4: Improve use of open source and social media intelligence

While the IC's contribution to support the aviation industry adapted over the past two decades, it should continue to improve its use of open source and social media. These two sources of information provide increasingly valuable intelligence that assist the FAA and DOD in managing risk to its air carriers and military airlift. Furthermore, use of open source and social media make sharing data with other nations easier, in both collection and dissemination.

Continued Agility with a Red-Cell

As the FAA adjusted in 2007 to create a waiver process to SFARs, the Administration, the DOD, and Congress must continue to search for ways to implement changes for better efficiency, effectiveness, and integration. The FAA demonstrated exceptional agility, especially in its support of the DOD. Though left out of planning with DOD or its Central Command for Iraq and Afghanistan, it dispatched aviation infrastructure experts to assist with reconstruction and stability when called. A Special Investigator General for Afghanistan Reconstruction (SIGAR) report in 2015 highlighted the FAA's relatively positive effect in building Afghan air traffic control services since 2002.[72] The Administration similarly deployed a team to support post-conflict aviation infrastructure reconstruction in Iraq.[73] The FAA's personnel remained in Iraq until just before the last US troops departed in 2011.[74] Similarly, the FAA created its crisis response team after 2001 and enhanced its capabilities in response to NSPD-47 in 2007. President Bush's NSPD-47 included multiple measures to achieve aviation security, focused on homeland defense and foreign partnership.[75]

While it displayed agility to adapt to changing conditions, the FAA is not free from bureaucracy nor does it immediately adjust. A way to proactively consider future threats and develop appropriate response can occur through "red-cell" wargaming. The FAA's role will likely continue to expand, as unmanned systems, space operations, hypersonic aircraft, and hybrid threats proliferate. The Administration does not have any Directorate or entity that explores and forecasts future conflict, threats to aviation, or emerging significant aviation complexities. Used by the military for over two decades, Congress only recently included language in its FAA Reauthorization Bill of 2016 regarding unmanned systems.[76] With increased civilian and adversary use, both domestically and abroad, Congress and the FAA could fail to address this issue no longer. Increasingly, the FAA and ICAO intend to mostly dismantle, though not eliminate, traditional radio aids to navigation, primarily opting for GPS coverage. The FAA continues its work toward a backup navigation system, other than radio navigational aids, but no system exists.[77] Air carriers' use of GPS for navigation and approaches accelerates with each year. Intentional or unintentional denial of GPS service continues as a grave concern for safety. GPS and unmanned systems provide two examples where emerging capabilities will affect domestic and international air carrier operations in support of US strategy.

Recommendation 5: Establish a red-cell capability

Unlike the DOD, the FAA has no "red-cell" entity.[78] Such a group, potentially integrated with others within the USG, would help it forecast greater support to operations globally. Results from such a temporary group would assist the FAA to identify its future capabilities requirements and to develop its funding strategy to meet demands. It would also help the FAA to meet its primary obligation of maintaining safe

and efficient air commerce in concert with the ICAO and US aviation industry. The FAA should develop a "red cell" to analyze, forecast, and address emerging threats and complexities to civil aviation. This team can, and should, capitalize on the DOD's effort in this area. Furthermore, it should integrate with DOD and foreign counterparts to address emerging technology, trends, and changes. Similar to efficiencies with LNOs and response cell personnel, this team need not constitute a new, distinct, full-time organization. Through periodic seminars or wargaming events, the FAA could integrate with the interagency, particularly the IC and DOD, to address emerging aviation threats to civilian aviation and its infrastructure. Such meetings would serve as a forum for the exchange of information and ideas. Meetings would also build appropriate relationships between leaders and planners.

Development Policy with Foreign Governments

While the FAA, DOD, and Congress should make some organizational changes, the FAA should clarify its policy regarding development of aviation infrastructure with foreign governments. Throughout its history, the FAA interacted with foreign governments and organizations; these efforts advanced US interests. Examples included Iraq, Afghanistan, and South Africa, where an FAA team trained foreign nationals from various nations on US hardware, using US systems and processes. In many cases, those foreigners traveled to the United States, where they lived and trained. In some of those instances, the FAA provided or organized this training with contractors at US taxpayers' expense. In at least one case, the USG used its training and provided hardware to states as an incentive to align with US foreign policy or to behave in a way that better met US national interests. In 1999, President Clinton offered

Nigeria training and aviation infrastructure hardware as a reward for that nation's transition to Democracy.[79] Split in cost between Nigeria and the United States, the FAA provided trainers and equipment, consisting of hardware, systems, and processes.

In addition to a reward, President Clinton's Nigerian effort provided several other collateral benefits. First, it strengthened a relationship between both governments on the African continent. Africa experienced competition from other world powers, including Russia, China, United States, France and the United Kingdom. Nigeria has the highest population size and largest economy in Africa. Increased cooperation allowed the US to counter influence from other major world powers, specifically Russia and China.[80] Second, the FAA's work, effectively consisting of economic aid and infrastructure development, served to open opportunity to additional growth after over 25 years of dictatorial government and an adversarial relationship with the US. According to the DOS, the US "seeks to help improve the economic stability, security, and well-being of Nigerians by strengthening democratic institutions, improving transparency and accountability, and professionalizing security forces. U.S. assistance also aims to reinforce local and national systems."[81] Third, Nigeria remains a key strategic partner in Africa in the fight against fundamentalist terrorist organizations aligned with Al Qaeda.[82] Relationships, built by the FAA and other federal agencies to reward the new Democratic government in Nigeria in 1999, provided the US with access and placement. The US pursued foreign terrorists in eastern Africa and Nigeria throughout the previous two decades. The Clinton Administration offered this aviation development support as part of a broader portfolio of US diplomatic engagement. Fourth, this arrangement provided US manufactured equipment. Hardware and training incurred an initial capital

cost. Nonetheless, Nigerian sustainment of complicated aviation devices required continued US manufacturers' support, repair components, and knowledge. Long-term sustainment created future business opportunities. Last, and most importantly, the development with the Nigerians created an opportunity for increased aviation safety, standardization, and security, based on US standards.

Haiti is another example where the USG leveraged FAA-developed relationships to enable national strategy. In 2010, Haiti experienced a 7.0 magnitude earthquake that killed between 220,000 and 316,000 people.[83] Additionally, it displaced roughly 1.5 million people.[84] The US has a long history of intervention and influence in Haiti, most notably from 1915-1934 and 1994, with the introduction of US troops.[85] In response to the earthquake, President Obama committed troops and relief agencies to Haiti once again, in the form of humanitarian aid. When the DOD, specifically SOUTHCOM, began its effort to deliver personnel, equipment, and supplies to Haiti, it experienced some challenges in use of Haiti's airports. The FAA deployed some of its experienced professionals to assist, resulting in smooth airflow and vital support to the crisis. These specialists used their previous relationships with Haitian aviation experts to coordinate and develop satisfactory processes that allowed civilian and military airlift.

As in Haiti, Nigeria, Iraq, and Afghanistan, the FAA continues to develop partner capacity in some states. In contrast to historical precedence, the FAA increasingly charges partners for their training and provides equipment at a cost. In 2003, the FAA agreed to build aviation infrastructure in Afghanistan with Afghan reimbursement for this support.[86] With a lack of revenue, weak economy, and its status as one of the least developed nations in the world, the Afghan government would struggle to meet such a

financial obligation. Based on the US' invasion and occupation following September 11, 2001, the Afghans lacked many options, though much of Afghans' revenue came from US taxpayer money. Without US funding, the USG cannot expect the Afghan government to pay for this training or infrastructure. Without aviation infrastructure, the USG cannot expect Afghanistan to progress as a legitimate, economically viable nation in the future.

As the US insists on charging fees for technical training and development, other allies and adversaries invest with zero or near zero cost to developing nations.[87] This investment derives many of the same results, as described in the Nigerian example. Hardware, systems, and processes from Russia or China do not equate to US standards. Should the US find itself operating in places where others invest in aviation infrastructure, it must proceed with unfamiliar procedures and equipment. US allies' or adversaries' investment in these locations allows them placement, access, and relationships denied to the US.[88] One can observe this condition in Africa and the Middle East.

Recommendation 6: Increase targeted foreign development

As a matter of policy, supported by the Executive and Legislative Branches, the USG should review and consider its aviation infrastructure development global strategy. Policy includes a review and update of the National Strategy for Aviation Security, including training aviation experts and providing hardware to developing nations. While it cannot afford to provide training, equipment, and support to every evolving nation, the USG should strategically target states in which to invest into aviation infrastructure. The USG must prioritize this effort, based on US interests and on where it desires to gain

access, placement, or influence. Congress' role should include language in the next FAA Reauthorization Bill that mandates global aviation infrastructure development training and engagement as law, along with appropriated funding to the FAA to execute.

Conclusion

The USG established the FAA in 1958, based on concerns about air traffic safety and standardization. The Administration met its statutory requirements and those of the nation through the Cold War. However, after September 11, 2001, the FAA adapted its roles to fit a new paradigm in conflict and warfare. Transregional threats, emerging technology, and adversaries' unlikely use of conventional warfare to counter the United States lead to a situation where the USG must continue to adjust its bureaucracy to meet new challenges. Virtually all of the emerging technology used in warfare, such as drones, cyber and hypersonic weapons, and a proliferation of anti-aircraft weapons, affect the USG's ability to project power. Similarly, this condition threatens the free flow of air commerce, which contrasts with the USG's stated policy.

With an adjustment to the organization, endorsed and supported by Congress and the Executive Branch, the FAA can maintain its current contributions to air safety while optimizing to best support national policy. The change will require funding to meet additional manning. The USG and the FAA must also do a better job of integrating into strategic planning and wargaming on foreign crises and operations. The FAA coordinates and works routinely with other agencies within the US homeland to respond to emergencies and facilitate national security. It lacks the same capacity outside US territory. Historically, the USG excluded it from critical planning and strategy formulation. The USG must include the FAA in the broader planning effort, especially abroad.

Finally, policy should change to reinvigorate FAA and commercial partnership to build aviation infrastructure, expertise, standards, and safety among developing nations. Such investment not only improves stability, safety, and efficiency globally, but it serves to establish and sustain critical relationships that allow the US to pursue its strategy more easily.

This paper provides six recommendations that will allow the FAA to better support the USG's ongoing and future national security efforts. Actions range across Congress, the Executive Branch, and within the FAA. First, the FAA should retain management responsibility for the war-risk insurance fund. Second, the FAA should reorganize to provide a necessary focus on national strategy outside the US, particularly in conflict or combat zones. Third, the FAA should build a ready pool of LNOs, capable of interacting and planning with DOD's Joint Staff, CENTCOM, SOUTHCOM, AFRICOM, and EUCOM. Fourth, the FAA's intelligence section and the USG's IC must improve its use of open source and social media data for collection and dissemination. Fifth, the FAA should develop a "red cell" to analyze, forecast, and address emerging threats and complexities to civil aviation. Sixth, Congress should include language in the next FAA Reauthorization Bill that mandates global aviation infrastructure partnership training and engagement as a specific FAA responsibility, along with appropriated funding to the FAA for the execution of this plan. The FAA should report activity to Congress. Additionally, the Executive Branch should review and update its National Strategy for Aviation Security to include language that specifically addresses a proactive policy toward training aviation experts and providing hardware to developing nations. With some relatively minor adjustment to organization, structure, funding, and policy,

the FAA can adjust to a changing world, meet its primary roles and responsibilities, and

best support the USG in pursuit of its interests abroad.

LIST OF ACRONYMS

AFRICOM	Africa Command
APOE	Aerial Port of Entry
CENTCOM	Central Command
CIA	Central Intelligence Agency
CRAF	Civil Reserve Air Fleet
DOD	Department of Defense
DOS	Department of State
DOT	Department of Transportation
EUCOM	European Command
FAA	Federal Aviation Administration
FBI	Federal Bureau of Investigation
GPS	Global Positioning System
IC	Intelligence Community
ICAO	International Civil Aviation Organization
IOD	International Operations Division
ISIS	Islamic State of Iraq and Syria
JCPOA	Joint Comprehensive Plan of Action
JP	Joint Publication
LNOs	Liaison Officers
MANPADS	Man-Portable Air Defense System
NORAD	North American Aerospace Defense Command
NORTHCOM	Northern Command
NOTAM	Notice to Airmen
NSC	National Security Council
NSPD	National Security Presidential Directive
ODNI	Office of the Director of National Intelligence
ODTAAC	Outside Declared Theater of Active Armed Conflict
PACOM	Pacific Command
SFAR	Special Federal Aviation Regulation
SIGAR	Special Investigator General for Afghanistan Reconstruction
SOCOM	Special Operations Command
SOSD	System Operations Security Directorate
SOUTHCOM	Southern Command
TSA	Transportation Security Administration
UAS	Unmanned Aerial System
UN	United Nations
USA	United States of America
USG	United States Government
USTRANSCOM	United States Transportation Command
VTC	Video Teleconference

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