SECURITY IN THE SAHEL: NIGER'S EMERGING YOUTH BULGE AND CASE FOR AMERICA'S NEW LIGHT ATTACK AIRCRAFT

BY

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I would also like to thank my beautiful wife, who has been patient and supportive throughout this year of academic research, often picking up the role of dual parenting for our two girls while countless hours were dedicated towards this thesis. Additionally, I would like to thank three of my service colleagues, "Drago" Janski, "Tazer" Chebino, and "Splinter" Ervin for offering valuable insight on light attack aviation, joint targeting considerations, and air advisory roles with relation to a regional task force construct consisting of partnered members. Finally, I would like to thank my senior mentors, who shall remain nameless for providing much needed wisdom and strategic insight on building partnership challenges and associated military strategy in the air domain.

The author was motivated to write this paper following the deadly October attacks on U.S. troops in Niger after initial media reports indicated U.S. warfighters requested air support in a time of need and it was nowhere to be found for over two hours. The author's thoughts and strategy recommendations were shaped by his experiences as a student at the Marine Corps Command Staff College learning the ways of the Marine, and a year-long focus on military strategy at SAASS. This paper is dedicated to U.S. and partnered warfighters who have, currently are, or are preparing to deploy to the Sahel region in hopes that this sheds light on an emerging strategic problem on the periphery.

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ABSTRACT

The Sahel region in West Africa is becoming increasingly turbulent for America's warfighters against an ever-growing violent extremist organization (VEO) threat. The October 4, 2017 attacks on U.S. troops in Niger has sparked much debate on U.S. Africa Command's role in sub-Sahara Africa. To date, the discussion lacks focus on the region's broad social challenges and security implications. Niger lies in the center of the Sahel with a vast territory consisting largely of inhospitable terrain, lacking security and becoming an increasing safe-haven for VEOs. More challenging, however, is Niger's emerging youth bulge, which if proper whole-of-government measures are not taken by the U.S. and regional partners, the prospect for recruiting due to low opportunity cost and economic greed becomes an increasing reality on the periphery. Without a credible organic air component in the region, the U.S. Air Force's new light attack aircraft provides a solution to strengthen security against VEOs while providing a pathway for a regional light attack Task Force allowing African nations to fight African conflicts.

Chapter 1

Introduction

I think clearly there's risk for our forces in Niger. Anytime we deploy full forces globally, we look very hard at the enablers that need to be in place in order to provide security for them. That ranges from the ability to pull them out if they are injured, to the ability to reinforce them at the point of a fight if they…need reinforcement.

- Lt. Gen McKenzie, Director of the Joint Staff, October 5th 2017.

The dictum above was released from the Pentagon the day after U.S. Army special operators Bryan Black, Jeremiah Johnson, Dustin Wright and partnered military member La David Johnson were killed during combat operations in western Niger. These members were part of a Green Beret team caught in a multi-hour fire-fight against Islamic State (IS) militants in the region. It is believed these troops were ambushed by over 50 enemy personnel armed with rocket-propelled grenades, mortars, and heavy machine-gun fire in a highly coordinated attack claiming the lives of the U.S.' most elite trained warfighting group.[1] These deaths mark the first U.S. military casualties in Niger and the largest U.S. military loss on the African continent since the battle of Mogadishu, and highlight the severity of the security situation in Niger and the entire Sahel region.

Niger ranks amongst the poorest countries in the world and is extremely fragile in terms of security and governance over its people. The country has a long tumultuous history of coups and corruption since gaining its independence from France in 1960. Contiguous countries Nigeria, Mali, and Libya also play a destabilizing role due to ongoing civil-war and arms and human trafficking networks. Coupled with the

[1] Cheryl Pellerin, "AFRICOM Announces Death of 4th Service Member in Niger Attack," *U.S. Department of Defense, News- Defense Media Activity,* October 2017, 1-4. https://www.defense.gov/News/Article/Article/1337250/africom-announces-death-of-4th-service-member-in-niger-attack/

presence of well-established terrorist organizations, Niger is a strategic military foothold against the global fight against violent extremist organizations (VEOs), and is perhaps a key reason the U.S. has the largest military presence of any other country in the region.[2]

An increasing presence of Boko Haram emerging from the south out of Nigeria, Al Qaeda in the Islamic Maghreb (AQIM) from Algeria and Mali in the north, fractionalized war-torn Libya to the northeast, and recent IS presence from the Middle-East, Niger is a strategic foothold that must be secured.[3] The majority of Niger's territory is within the Sahara Desert, leaving over 60% of the northern terrain unsuitable for agriculture due to extreme heat and harsh climates. The southern part of the country is also highly susceptible to drought due to the country's dependence on the Chad basin. Niger is a key location in the Sahel region due to its position between Nigeria, Africa's most oil-rich and populated country of 120 million, and war-torn Libya, which is wrought with terrorism, corruption and criminal activity. This land bridge acts as a primary gateway for sub-Sahara diaspora migrating from Africa into Europe, making Niger's stability a primary U.S. national security interest.

The October 2017 attack on U.S. troops has garnered significant attention from the media questioning U.S. AFRICOM's military posture and role in the Sahel. However, the discussion lacks focus on the region's broader social challenges that pose a direct threat to U.S. national interest and security. This paper seeks to provide a greater understanding of future state fragility and potential for increased

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[2] For an extended discussion on the U.S. military footprint in Niger, see 25 October 2017 *Congressional Research Service Report,* "Niger: Frequently Asked Questions About the October 2017 Attack on U.S. Soldiers," 4-5. https://fas.org/sgp/crs/natsec/R44995.pdf

[3] Peter Pham, "Niger is on the front lines of the war against terrorism," *The Hill,* October 2017. http://thehill.com/opinion/national-security/357828-niger-is-on-the-front-lines-of-the-war-against-terrorism

political violence throughout the Sahel, particularly Niger, through analysis of the country's social challenges and security implications regarding its emerging youth bulge. This thesis explains how the security situation in Niger has deteriorated, leading to the recent deaths of America's most elite.

The research on factors that fuel instability and set conditions for insurgency has been ubiquitous since the 9/11 attacks on American soil. Many contemporary social science scholars argue population grievances, which may result from ineffective or illegitimate governance, often form the basis for rebellion. Others highlight economic greed as a catalyst. The associated factors in some combination create a recipe for civil strife and insurgency to take form.[4]

Multiple competing research organizations and U.S. government agencies have created state fragility indexes to evaluate conflict trend and pattern analysis to identify trigger points. These metrics provide a snapshot in time and space on past events but are somewhat tautologically flawed in falling short of root cause explanation. The heuristics primarily used for trend analysis focus on the contributing factors of instability (increased violence, body count, displaced populations, rioting, GDP growth, state versus non-state violence and terrorism events, etc.) after an event rather than forecasting by looking at a country's population growth.[5]

[4] Fearon and Laitin (2003) and Collier and Hoeffler (2004) findings and the relationship to a nation's youth bulge will be covered in chapter three.
[5] Henrik Urdal specifically addresses the impact of large youth population groups and connects them to an opportunity motive cost-benefit analysis which will be further discussed in chapter three.

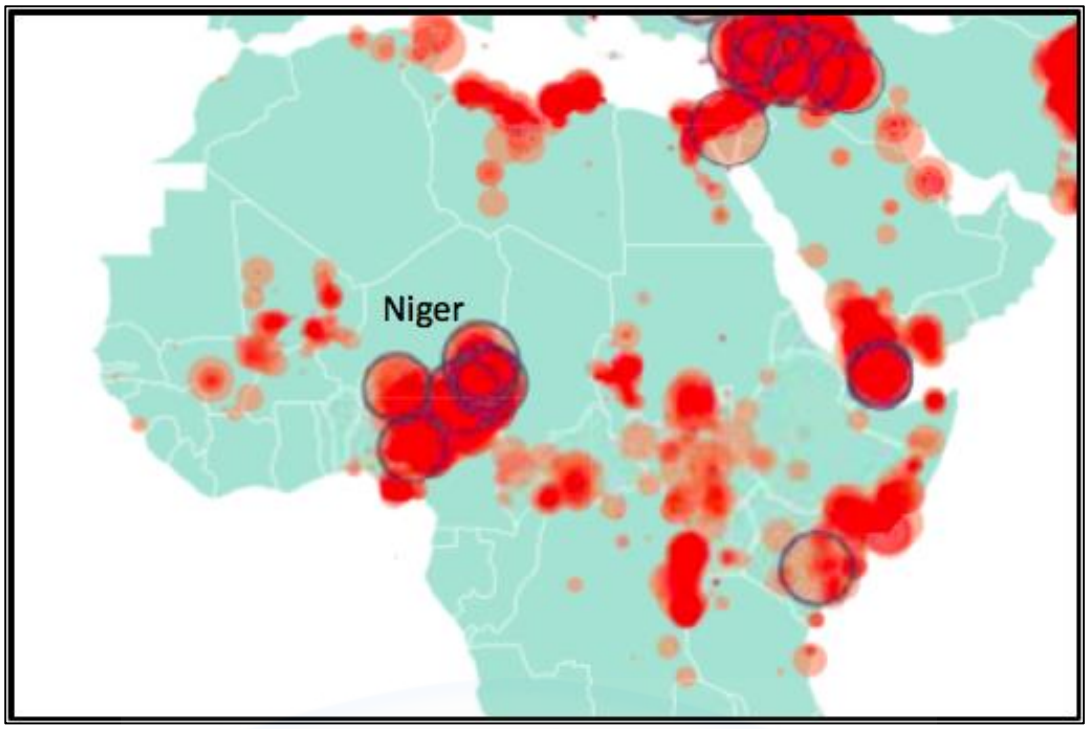

Figure 1: Terrorism attacks- location (red)/intensity (size), 2016.
Source: 2016 Global Terrorism Index, Institute for Economics and Peace.

The effects of youth bulge on social, political, and economic structures remains an important source of inquiry among social scientists. Population trends, alongside the proliferation of terrorism across the African Sahel, demands further analysis in order to assess the potential for security threats that may necessitate greater U.S. military involvement in the region. Niger has consistently led the world in highest total fertility rate (TFR) averaging between 7-8 children per female, while experiencing over a 60% decrease in infant mortality rate (IMR) since 1990. This decline in IMR has led to a significant growth in the country's young population presenting a challenge for Niger's government and infrastructure to absorb. The rise of VEOs in Niger combined with the country's fragile government and emerging youth bulge presents a wicked problem that must be carefully approached to prevent future recruitment and increase in insurgency to take form. This thesis aims to provide an effective solution towards bolstering the country's security by

developing an organic air component in the form of a regional light attack aircraft (LAA) task force. By introducing LAA into the Sahel operating environment, the U.S. can work by, with, and through regional partners in order to build a credible core of African operators.

This LAA capability will provide an effective means for the government of Niger as well as regional partners to combat VEO's who are currently able to operate in the seams due to the vast territory the Sahel provides. Increasing security from the air domain will limit the U.S. footprint in the region and provides a way forward that enables a long-term security strategy ensuring that African nations are fighting African conflicts. Prior to addressing the potential security implications of the booming youth cohort and recommended LAA strategy, it is vital to briefly highlight the country's political, social, and economic challenges to provide more clarity on its fragility as a nation state.

Chapter 2

Niger's Social Dynamics and Challenges

Niger is a land locked, sub-Saharan country centrally located in the Sahel region of Africa. It is approximately twice the size of Texas and close to the same population of 21 million. The majority of Niger's territory is within the Sahara Desert, making over 60% of the northern terrain unsuitable for agriculture due to extreme heat and harsh climates. The southern part of the country is also highly susceptible to drought due to the country's dependence on the Chad basin. Because of the geographic and climate disparity separating the country, close to 90% of the country's populace is concentrated in the southern region along the east and west borders neighboring Nigeria, Burkina Faso, Benin, and Mali.[1] This demographic dispersion and topography have strategic implications for the government's ability to control its populace.

Present-day Niger's geography and politics are greatly influenced by its French colonial legacy from the early 1920s until gaining independence in 1960. On July 01 1922, the *Terrioire du Niger* became the *Colonie du Niger*, forcing the Niger populace to pay for the new form of government through taxation. Occupying much of North Africa, France recognized the strategic location of the territory due to its access from the sub-Saharan region into Europe via vital lines of communication through trade routes.[2] Throughout this colonial period,

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[1] CIA World Factbook. Niger- People and Society, 2017. https://www.cia.gov/library/publications/the-world-factbook/geos/ng.html

[2] Niger acted as a primary central trade route capable of connecting all four corners of Africa into the central Sahel region, making it an economic keyhole in all of sub-Sahara Africa since the 14th century A.D. In 1515, the Songhay Empire seized the town of Agadez to establish to secure trading into the Middle-East. During the same period that France was colonizing Niger and Mali in the 20th century, Great Britain was colonizing Nigeria creating resource and trade competition, creating today's political borders that exist between the two countries. Abdourahmane Idrissa, and Samuel Decalo. *Historical Dictionary of Niger. 4th Edition.* Scarecrow Press, Inc. 2012. Pg xxv-xxix. Modern day Agadez

France struggled to properly secure these trade routes from indigenous tribes, specifically the nomadic Tuareg and the Toubou in the Kaouar region.[3]

Figure 2: Map of Niger (Tan) and Central Sahel Region (Light Grey).
Source: Congressional Research Services- 2017 Report on Niger.

Fierce clashes and revolt took place between the French and these ethnic tribal populations over taxation, control, and the belief that the French represented the "infidel" with intentions of enslaving the population. The French fought hard to suppress the continuous rebellions dubbed the *Franco-Tuareg* conflicts, but fell short of being able to maintain control of the northern areas of the country occupied by the

in central Niger marks the historic trading crossroad and has recently been labeled as an UNESCO world heritage site for its importance. United Nations Eductional Scientific and Cultural Organization (UNESCO). Agadez, Niger. 2017. http://whc.unesco.org/en/list/1268

[3] Idrissa, Abdourahmane. Pg 6.

Tuareg.[4] The primary takeaway from this brief historical synopsis is that Niger's population has long resisted Western style influence, and more importantly, the clash between the French and Nigeriens has left a long-standing grievance regarding any future attempts of external influence.

Political

Niger has struggled to establish and maintain legitimate and effective state institutions, and has experienced over a dozen internal divisions and coup attempts after separating from France in 1960. The first military coup in 1963, only three years after independence, was thwarted only through French military assistance, requiring external military for security. Lacking essential capabilities to initially govern, Niger signed a military cooperation agreement with France that authorized troops to remain in the country for fifteen years in order to provide security and stability during the post-independence transition. Niger experienced two additional coups in 1996 and 1999 primarily caused by the government's inability to provide essential security, effective rule of law, and the transition to a formal secular education system.[5]

These coups led to a constitutional referendum in 2000 establishing the 5th Republic Constitution and creation of a court system detached from the country's supreme court.[6] The legal system adopted in the 5th Republic Constitution led to strife over the legitimate authority in civil affairs between advocates of an Islamic system and those of a state legal system. Friction also emerged among political party elites when the National Assembly granted amnesty to all senior officials

[4]For more detailed information on the Franco-Tuareg struggle during colonial rule, see Abdourahmane Idrissa and Samuel Decalo. *Historical Dictionary of Niger. 4th Edition*, (Plymouth, UK: Scarecrow Press), 2012, 3-8. This edition offers a detailed chronology of colonial period as well as the hardships experienced by the Niger populace during French occupation.
[5]Idrissa, xxv-xxix, xl-xli, 374-379.
[6] Idrissa. xl-xli.

responsible for the 1996 and 1999 coups. This amnesty led to a strong political divide between Niger's two prominent political parties, *Rassemblement pour la Democratie et le Progres* (RDP) and the *Pari Nigerien pour la Democratie et le Socialisme* (PNDS), which remains contentious and strongly divided.[7]

At the turn of the 21st century, Niger's government experienced a number of setbacks to gaining legitimacy due to corruption. Moreover, in 2005, a country-wide food shortage following a year-long drought created a significant national crisis. The government buckled under pressure by the International Monetary Fund (IMF) to impose a value-added tax (VAT) system on goods such as flour, sugar, milk, and potable water in place of the crop shortage. This led to national protests lasting over a month. Out of fear of violence and revolt, the government rescinded the VAT on these goods in order to maintain political control. If Niger's government had effective security measures in place, leaders could have engaged the populace on the benefits of the taxation plan to bolster the economy during a time of crisis.[8]

Perhaps the most significant event precluding Niger's political stability was the revolt and subsequent coups that deposed the country's former president Mamadou Tandja. Nearing the end of his second term in 2009, Tandja disbanded the National Assembly by assuming self-proclaimed emergency powers and ratifying the country's constitution. This led to the adoption of a 6th republic constitution with provisions to allow Tandja to seek a third term as president. The decade of corruption and human rights violations during Tandja's ten years as president, coupled with the illegality of running for a third term, led to a successful

[7] Idrissa. Pg xl.
[8] Bretton Woods Project- Social Services. "IMF accused of exacerbating famine in Niger," September 2005, 1-2.
http://www.brettonwoodsproject.org/2005/09/art-351492/

internal coup backed by senior military leaders in February 2010.[9] The consequences of this coup prompted another power shift in government followed by a purge of leadership from the country's old regime, resulting in the rise of Niger's current president, Mahamadou Issoufou.[10]

Issoufou ran for office three times prior to 2011 and was prime minister of the PNDS during both the 1996 and 1999 coups. Only five months into his term as president, 10 military members attempted to assassinate Issoufou in response to a crackdown on corruption. In December 2015, Issoufou's security team thwarted another military coup involving aerial attacks.[11] Four senior Nigerien military officials have been linked to the 2015 attempt, providing insight as to how deeply the military and political structure remain divided since the 2010 Junta.[12] Issoufou's credibility and legitimacy was again challenged internally during the 2016 election. Issoufou charged his incumbent Hama Amadou with human trafficking during the election cycle, leading to a boycott by the ruling party during his imprisonment and subsequent re-election for a second term.

Social

Over 98% of Niger's population is Muslim due to immigration and the establishment of historical trade routes into and out of the Middle East through Egypt. Approximately two percent of religious faith is either Christian or Bahia.[13] Of the Muslim community, an estimated

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[9] Virginie Baudais and Gregory Chauzal. "The 2010 Coup D'état in Niger: A Praetorian Regulation of Politics?" *African Affairs Journal.* Vol. 110, No. 439, April 2011, 295-296.

[10] Idrissa, Abdourahmane, and Samuel Decalo. *Historical Dictionary of Niger. 4th Edition*, (Plymouth, UK: Scarecrow Press), 2012, xli.

[11] CNN, "10 arrested in Niger coup attempt, president says," August, 2011, 1-3. http://www.cnn.com/2011/WORLD/africa/08/03/niger.coup.arrest/index.html

[12] BBC News. Niger coup plot foiled- President Mahamadou Issoufou. 18 December 2015. http://www.bbc.com/news/world-africa-35128742

[13] U.S. Department of State. "Niger," *International Religious Freedom Report*, 2016, 1-4. https://www.state.gov/documents/organization/268924.pdf

95% practice Maliki-Sunni Islam with the remaining Muslim population being Shia. The Shia minority primarily occupy the south-eastern part of the country with the Fulani and in the central/north area of the country amongst the Tuareg. Niger's four largest ethnic groups (Hausa, Fulani, Zarma, and Taureg) account for over 92% of the country's booming population.[14]

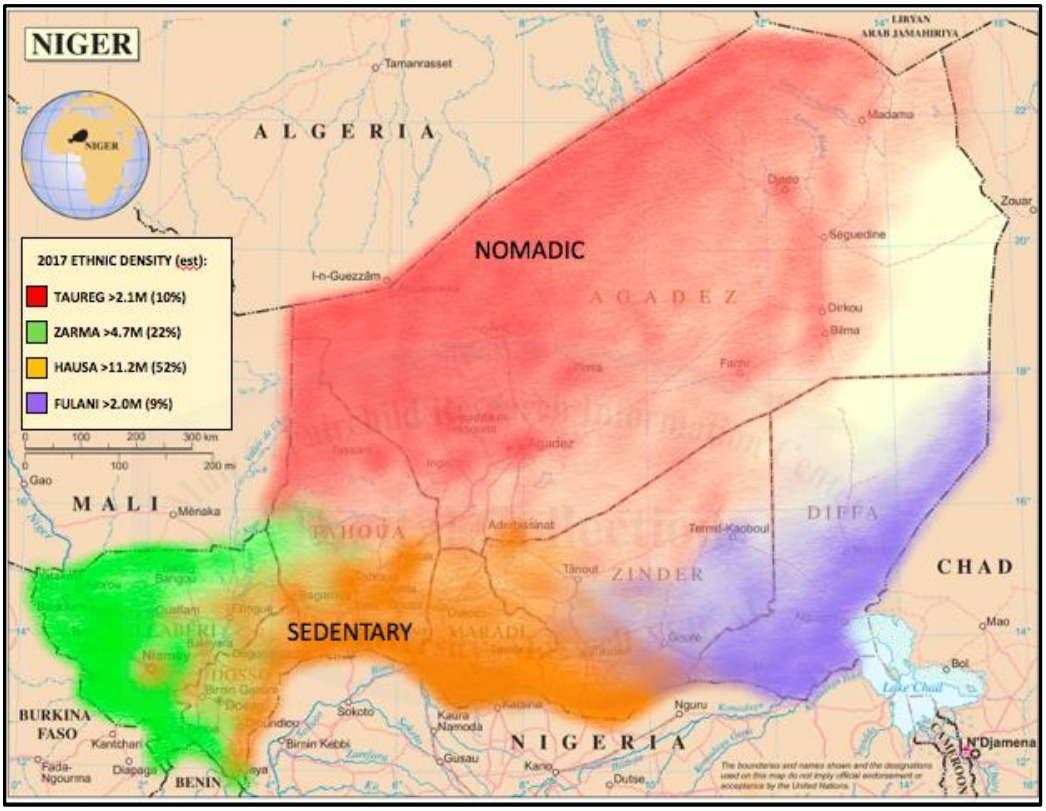

Figure 3: Ethnic Population Breakdown of Niger
Source: Map from Britannica Encyclopedia. Ethnic density table and shading by author using compiled data from University of Texas Map Archive (1960), CIA World Factbook, Historical Dictionary Niger (4th Edition), Council Foreign Relations sub-Sahara Africa, and World Bank. This ethnic plot is not all-inclusive and is meant to provide the reader a purposeful snapshot where the majority of each ethnic population originates within the country. Data was extrapolated from multiple sources to provide a better understanding of the country's overall demographics as no map of Niger's demographics in the 21st century currently exists.

[14] World Atlas Website. "Niger," *Society*, 2018, 1-3. https://www.worldatlas.com/articles/largest-ethnic-groups-in-niger.html

The dynamics of Niger's current demographics are influenced by pre-colonial, colonial, and post-colonial era rule, and the country's current borders and sovereignty were only established in 1960. Early settlers conducting fishing, farming, and cattle grazing along the Niger River established permanent colonies through the central and western part of the country that slowly expanded outward towards the Chad basin. A century of continuous warfare forged the ancient Songhai (also known as *Songhay*) empire, now modern day Mali, Niger, and much of northern Nigeria. The Songhai subsequently introduced sub-Saharan trade routes into the Middle-East to fund the kingdom's rule, a dominion that culminated in the 15th century A.D when civil war erupted. The fallout from this war, combined with an influx of nomads from northern Africa and trade immigrants from the Middle East, resulted in the eight primary ethnic tribes representing modern Niger today. [15]

The Hausa population currently represents over 50% of Niger's population, dominating the southern and most fertile lands of the country. The Hausa primarily thrive off farming and the raising of livestock traded within Niger and neighboring countries.[16] They share much of the southern border with the Fulani tribe occupying the south-eastern part of Niger. In 1805, a violent Fulani led jihad sought to introduce and enforce Islamic rule and law, leading to the establishment of Africa's first ever Caliphate in the Sokoto region, now modern day northern Nigeria and southern Niger.[17]

This seven-year jihad led to political and socio-economic reform throughout most of West Africa as well as a revival of the Islamic judicial

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[15] Abdourahmane Idrissa, and Samuel Decalo. *Historical Dictionary of Niger. 4th Edition*, (Plymouth, UK: Scarecrow Press), 2012, 5-12.
[16] Idrissa, 4.
[17] Hassan Gwandu, "West African Islamic Civilization: Sokoto Caliphate and Science Education;" *World Academy of Science, Engineering and Technology-International Journal of Educational and Pedagogical Sciences.* Vol 10, No 9, 2016, 3261-3264. https://waset.org/publications/10005800/west-african-islamic-civilization-sokoto-caliphate-and-science-education

system and fatwah across the Hausaland. The establishment of this Caliphate acted as a merger between the Fulani and Hausa, strengthening the tribes' ties through religious rule and practice. This Caliphate ended at the turn of the 20th century under French and British colonial rule, replacing it with a regional Sultan. The Sultan of Sokoto is still a prominent religious position in the region providing Islamic faith to the Hausa and Fulani population in both Niger and northern Nigeria.[18]

To the west of Niger's Hausa population along the western border and capital are the Zarma population. The Zarma (also recognized as "*Djerma*") community also rely heavily on farming as well as trading cattle with the Tuareg for grazing capabilities in the northern part of the country. The Zarma are one of the remaining tribal sects that emerged post Songhai rule and survived rebellions for centuries until French colonialization. Over the past century, the Zarma have been relatively peaceful and accepting of the Hausa to the east due to their geographic location and access to fertile lands. The sectarian divide between the Zarma and Hausa has diminished slowly since the 1990s with governmental elections and increasing diversity of Niger's capital Niamey, the heart of traditional Zarma territory.[19]

Niger's third largest ethnic group, the Tuareg, have consistently posed a challenge to the state since the French colonial period, particularly during prolonged rebellions in 1991-1995 and 2007-2009. Tuareg were once nomadic throughout sub-Saharan Africa and have primarily taken root in central and northern Sahel since the 12th century. Unlike the Hausa, Zarma, and Fulani who are mainly sedimentary with small parcel land ownership, the Tuareg are heavily

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[18] Paul Lovejoy and J.S. Hogendorn, "Revolutionary Mahdism and Resistance to Colonial Rule in the Sokoto Caliphate, 1905-1906," *The Journal of African History*, Vol. 31, no. 2 (1990), 217-223.

[19] Abdourahmane Idrissa, and Samuel Decalo. *Historical Dictionary of Niger. 4th Edition*, (Plymouth, UK: Scarecrow Press), 2012, 4.

dependent on rain and land fertility for cattle grazing, severely limiting the tribe's ability to anchor in areas for prolonged periods. Because of this dependence, many Tuareg have historically migrated in and out of Niger into Mali and Libya to seek alternative income sources. This nomadic and transitory way of life has led to a borderless sphere of influence, dependence, and loyalty ties that are often counterproductive to Nigerien government interests. Former Libyan leader Muammar Gaddafi employed thousands of Tuareg for decades as part of an insurgent network across Libya, Chad, and Niger to expand his interests.[20]

Economic

The economy of Niger is extremely dependent on agriculture, making the country highly susceptible to crisis. In 2016, the United Nations ranked Niger second to last among developing countries. Only 25% of Niger's GDP relates to agricultural activity, yet over 85% of the population survives off of it. Niger is also susceptible to drought, leading to mass food shortages in the past.[21]

In 2016, Niger reported a GDP per capita of $387.00 USD, equating to $1.06 USD per day. To put this figure into perspective, the world average GDP per capita is $10,300 USD, approximately 30 times the amount that a Niger citizen earns. When compared to Niger's 2008 reported GDP per capita of $349.00 USD, financial quality of life for the average Nigerien has only increased 0.09 cents over the course of a decade.[22] The countries surrounding Niger are all healthier in terms of financial well-being, creating a clear disparity of average daily income when compared regionally and against the world average:

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[20] Idrissa, 442-451.
[21] CIA World Fact Book "Niger- Economy," 2017, https://www.cia.gov/library/publications/the-world-factbook/geos/ng.html
[22] Trading Economics. "Niger Economy- GDP Per Capita, 2008-2017," 2017, 1-2. https://tradingeconomics.com/niger/gdp-per-capita

Table 1: Comparison of GDP Per Capita & Daily Average Income

Country	GDP/Capita (USD)	Average Income/Day (USD)
Niger	*387*	*1.06*
Algeria	4,220	11.56
Burkina Faso	620	1.70
Nigeria	2,450	6.71
Chad	720	1.97
Combined	1,680	4.60
World Average	10,300	28.2

Source: Table by author- Data from Trading Economics GDP per Capita.

The economic health of Niger is also tethered to the official development assistance of the U.S. and IC. Foreign aid to Niger has increased 30% over the last decade peaking at $918M USD in 2016, highlighting the country's extreme dependence on external support.[23] Another alarming indicator concerning the economic health of Niger is the increase on its external debt to GDP. For Niger, this figure has increased 38% since 2014, garnering significant concern from the World Bank.[24] The recent spike in Niger's external debt to GDP and increased reliance on foreign aid illustrate that although Niger boasts a positive GDP growth of 4%, it is rapidly spiking its credit obligations without a viable recovery plan.

Arguably the most important metric used to determine the economic health and prosperity of a country is an outsider risk assessment towards venture capitalism to boost growth. Niger's government has repeatedly advocated for foreign investment; however, this international plea has been stagnant due to the assessed risks.[25]

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[23] World Bank, "Net Official Development Assistance- Niger timeline," 2017, 1-2 https://data.worldbank.org/indicator/DT.ODA.ALLD.CD?end=2015&locations=NE&start=2006

[24] World Bank. "Overview- Niger," 2017, 1-4 http://www.worldbank.org/en/country/niger/overview

[25] U.S. Department of State, "2015 Investment Climate Statement- Niger," May 2015, 1-6. https://www.state.gov/e/eb/rls/othr/ics/2015/241686.htm

According to the Heritage Foundation, which assesses a country's economic freedom via rule of law, government size and spending, regulatory efficiency, and open markets, Niger has been on a continuous decline since early 2014. Being assigned the rank of 154 out of 187 world countries, this decline alongside Niger's increasing external debt and extremely low GDP per capita is perhaps indicative of a larger security implication- its emerging youth bulge.[26]

[26] World Heritage Website, "2018 Economic Index of Freedom- Niger," 2018, 1-3. https://www.heritage.org/index/country/niger

Chapter 3

Youth Bulge and Security Implications for Niger

I don't think Islam is any more violent than any other religions […]. But the key factor is the demographic factor. Generally speaking, the people who go out and kill other people are males between the ages of 16 and 30. During the 1960s, 70s, and 80s there were high birth rates in the Muslim world, and this has given rise to a huge youth bulge.

- Samuel P. Huntington, 2001 Interview.

We break into houses for cash; sometimes we beat people for money, we steal their animals so we can eat and then we gather up and take Tramol [an opiate drug], smoke ganja [marijuana] and drink alcohol. We have no jobs; some of us are still at high school but we need money. Violence has become a form of work for us.

- Niger Boko Haram Members, 2014 BBC Interview.

Youth bulge

A youth bulge is a rapidly growing youth cohort relative to its normative past. These growing youth cohorts are typically associated with a population increase under the age of 24 years. Youth bulges can have potential negative effects on a nation's economy, security, and ability to govern if not properly mitigated with education and economic opportunity. For weak or developing countries where rebellious activity takes place at younger ages, a measure of a nation's youth cohort relative to total population size should be considered for risk for instability.[1]

On 1 June 1984, while serving as president of the World Bank, former Secretary of Defense Robert S. McNamara published an article for *Foreign Affairs* titled "Time Bomb or Myth: The Population Problem." This article addresses the effects of rapid population growth on both a local and national level. McNamara described the rapid population growth

[1] Samuel Huntington, *The Clash of Civilizations and the Remaking of World Order*, (New York: Simon & Schuster, 2011) 118.

phenomenon in developing countries with a long history of high fertility rates and significant decline in mortality. He postulated that rapid growth in a country's population bore detrimental consequences on economic development, and forecasted that the demographic age bracket of 20-40 years would bear the brunt of these effects. He concluded a large increase in this population group directly contributed to lower per capita income, creating an unstable feedback system if not kept stable at the political level. [2]

A decade following McNamara's article, political scientist Samuel Huntington posited that the post-Cold War era demanded new attention regarding world order and a need to revisit cultural factors within societies. Huntington concluded predominately Muslim countries had significantly higher birth rates than non-Muslim countries, and of these countries, at least 20% of the population were under the age of 25.[3] Huntington attributed this large percentage of young population groups to instability and violence due to the ease of recruiting by Islamic organizations and political movements with relatively low costs.[4] In 1997, Huntington identified Muslim countries currently experiencing a youth bulge phenomenon and also forecasted countries that would experience this phenomenon in the 21st century. Huntington's predictions on countries with significant youth bulges and instability shown below may strike an eerie chord as a large percentage have led to long-term security conflicts and prolonged intervention from the U.S and IC:

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[2] Robert McNamara, "Time Bomb or Myth: The Population Problem," *Foreign Affairs*, Summer 1984, vol. 62, no. 5, 1107-1131.
[3] Samuel Huntington, *The Clash of Civilizations and the Remaking of World Order*, (New York: Simon & Schuster, 2011) 46-48.
[4] Huntington, 118-119.

Table 2: Huntington's 1992 Youth Bulge Table Prediction by Decade

YOUTH BULGE IN MUSLIM COUNTRIES

1970s	1980s	1990s	2000s	2010s
Bosnia	Syria	Algeria	Tajikistan	Kyrgyzstan
Bahrain	Albania	Iraq	Turkmenistan	Malaysia
UAE	Yemen	Jordan	Egypt	Pakistan
Iran	Turkey	Morocco	Iran	Syria
Egypt	Tunisia	Bangladesh	Saudi Arabia	Yeman
Kazakhstan	Pakistan	Indonesia	Kuwait	Jordan
	Malaysia		Sudan	Iraq
	Kyrgyzstan			Oman
	Tajikistan			Libya
	Turkmenistan			Afghanistan
	Azerbaijan			

Decades in which 15–24-year-olds have peaked or are expected to peak as proportion of total population (almost always greater than 20%). In some countries this proportion peaks twice.

Source: Samuel Huntington, The Clash of Civilizations and the Remaking of World Order.

In 2006, the Research Council of Norway and the Norwegian Trust Fund for Environmentally and Socially Sustainable Development (NTFESSD) funded an extensive study on the impact of a nation's youth bulge on a social system. Political scientist Henrik Urdal analyzed existing research on greed and grievance to determine if risk of political violence increases relative to the number of possible perpetrators involved. Urdal specifically narrowed his research to large youth cohorts ages 15-24 as the independent variable towards an increased risk of political violence. Using statistical analysis, Urdal concludes youth bulges provide greater opportunity for violence through an available abundance of youth when combined with low opportunity costs.[5] He also posits stronger forms of violence will arise when institutional

[5] Henrik Urdal, "A Clash of Generations? Youth Bulges and Political Violence," *International Studies Quarterly- Center for the Study of Civil War, The International Peace Research Institute, Oslo* (2006), 607. https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1468-2478.2006.00416.x

crowding and increased unemployment occurs as a by-product of a nation's youth bulge. Not only does Urdal's work address the negative impact of a youth bulge on a system via cost-benefit analysis and opportunity, he also concludes a developing country experiencing a large increase in population due to declining fertility rates has a finite window of opportunity for economic development. If fertility rates remain high, causing increased dependency rates on the youth cohort during this window, there exists an even higher risk for political violence on the system.[6]

More recent literature on the effects of a nation's youth cohort focuses on a government's response in terms of repression relative to the size of the cohort involved. Senior researcher Ragnhild Nordas from the Peace Research Institute Oslo (PRIO) and U.S. political scientist Christian Davenport study the type and severity of repressive behavioral response from both democratic and authoritarian regimes. Nordas and Davenport analyze the severity of state repression based on the relative size of the youth cohort, revealing two significant findings.[7] First, a youth cohort does not need to exceed 20% of the overall country population to have negative effects on the government's security structure. Second, it takes longer for a democratic nation to exhibit repressive behavior than it does for an authoritarian regime.[8]

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[6] Urdal, 607-608.

[7] This analysis was done using a thirty-year timeline from 1970-2000. For more detailed information, see Ragnhild Nordas and Christian Davenport. American Journal of Politcal Science, Vol. 57, No. 4 (October 2013) *Fight the Youth: Youth Bulges and State Rrepression.* Pg 926-940.

[8] For the historical research analysis, Nordas and Davenport used the Political Terror Scale (PTS) extracting data from both the U.S. State Department and Amnesty International to account for political biases to neutral out the rankings given to state repression in the past.[8] By using the PTS, this study analyzed the actual behavior of state actors based on assessed repression levels compared to the size of the youth cohort experienced. Their hypothesis that the higher the percentage of a youth cohort yielded a higher level of state repression could then be measured against youth bulges in the age bracket of 15-24 years of age and again as a percentage of the total population to account for the 20%

This literature review on youth bulges provides insight on the evolution of youth bulge theory spanning across four decades of research. It also highlights how an abundance of youth can have detrimental effects on a nation's political, social, and economic structure if not properly mitigated. McNamara's assessment on rapid population growth and per capita economic considerations enabled Huntington to further develop the argument of youth bulge effects in the post-Cold-War era by focusing on Middle-Eastern countries with high percentages of young population groups. This in-depth analysis enabled Urdal the ability to then pair a youth bulge phenomenon to the likelihood of political violence in order to better understand the motives on why some population groups rebel.

Nordas and Davenport's most recent literature allow further analysis as to the relationships between youth cohort age brackets versus overall population percentage as well as examining the relationship of state repression from a regime versus a democratic nation state. Over four decades, youth bulge theory has evolved to help better explain why a state's political, social, and economic structure becomes stressed when a country is faced with a significant increase in youth without an effective plan to mitigate this increase. With this evolution of thought and framework established, I now analyze the impacts of Niger's youth bulge.

Niger's Youth Cohort

Close to 70% of Niger's population is under the age of 25 years old, more than triple the 20% Huntington suggests as a trigger for political instability and violence.[9] To put this in perspective, this youth cohort

threshold as Huntington ascribed. In addition to this, their testing could also be paired to both democratic nation states against authoritarian regimes.

[9] CIA World Fact Book, "Niger- Demographics," 2018, https://www.cia.gov/library/publications/the-world-factbook/geos/ng.html

equates to over 15M, nearing Syria's total present day population.[10] Niger is also one of the fastest growing countries in the world with an average population increase of 4% over the last decade.[11] Due to this growth rate, Niger is expected to double in population nearing 2035, creating one of the largest youth bulges ever measured. The economic conditions discussed previously in this paper favor McNamara's stance that a youth cohort causes instability due to Niger's low per capita income. Likewise, Huntington's view that the youth bulge phenomenon is primarily a developing country phenomenon also holds true regarding Niger with its young history as a nation state and independence in 1960.

The root cause of Niger's youth bulge stems from a high steady-state fertility rate combined with a decreasing infant mortality rate beginning in 1990. Total Fertility Rate (TFR) by definition, is the measurement of children born per average female per year in a given country.[12] Niger has consistently led the world in fertility rate over the past two decades averaging 7.5 children per female, towering over the global average and forecasted to remain high due to the country's social context. [13] Conversely, infant mortality rate (IMR) compares the number of infant deaths less than one year of age per 1,000 live births in a given

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[10] CIA World Fact Book, "Syria- Demographics," 2017, https://www.cia.gov/library/publications/resources/the-world-factbook/geos/print_sy.html

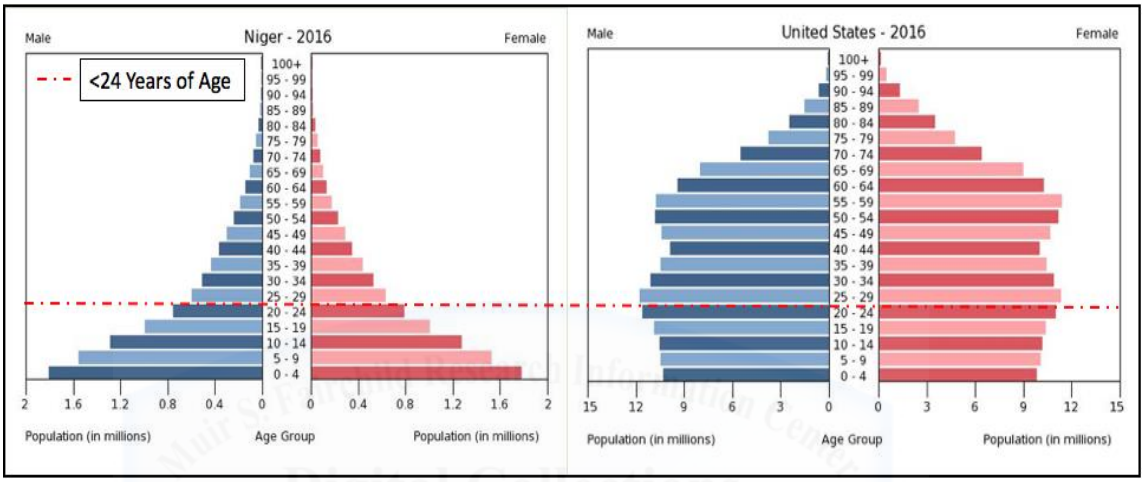
[11] U.S. Census Bureau. "Current U.S. Population and Statistics," January 2018, 1-2. https://www.census.gov/popclock/

[12] This measurement is the most widely used fertility measurement in the world, primarily due to it being unaffected by differences or changes in age-sex composition. For more information on TFR, see Measure Evaluation Organization Website. "Total Fertility Rate- Family Planning and Reproductive Health Indicators," 2017, 1-5, https://www.measureevaluation.org/prh/rh_indicators/family-planning/fertility/total-fertility-rate

[13] Jill Filipovic, "Why have four children when you could have seven? Family planning in Niger," *The Guardian*, March, 2017. https://www.theguardian.com/global-development-professionals-network/2017/mar/15/why-have-four-children-when-you-could-have-seven-contraception-niger see also USAID Website, "Niger- Where We Work," 2017, 1-2. https://www.usaid.gov/niger/our-work

year. IMR is a metric commonly used by the IC as a snapshot in time and space to assess the development of a country's healthcare sector.[14] In theory, a higher IMR in a country indicates constraints in healthcare access, sanitary conditions, and the potential for the spread of infectious disease.

Table 3: Demographic pyramid charts of Niger (Left) vs U.S. (Right)

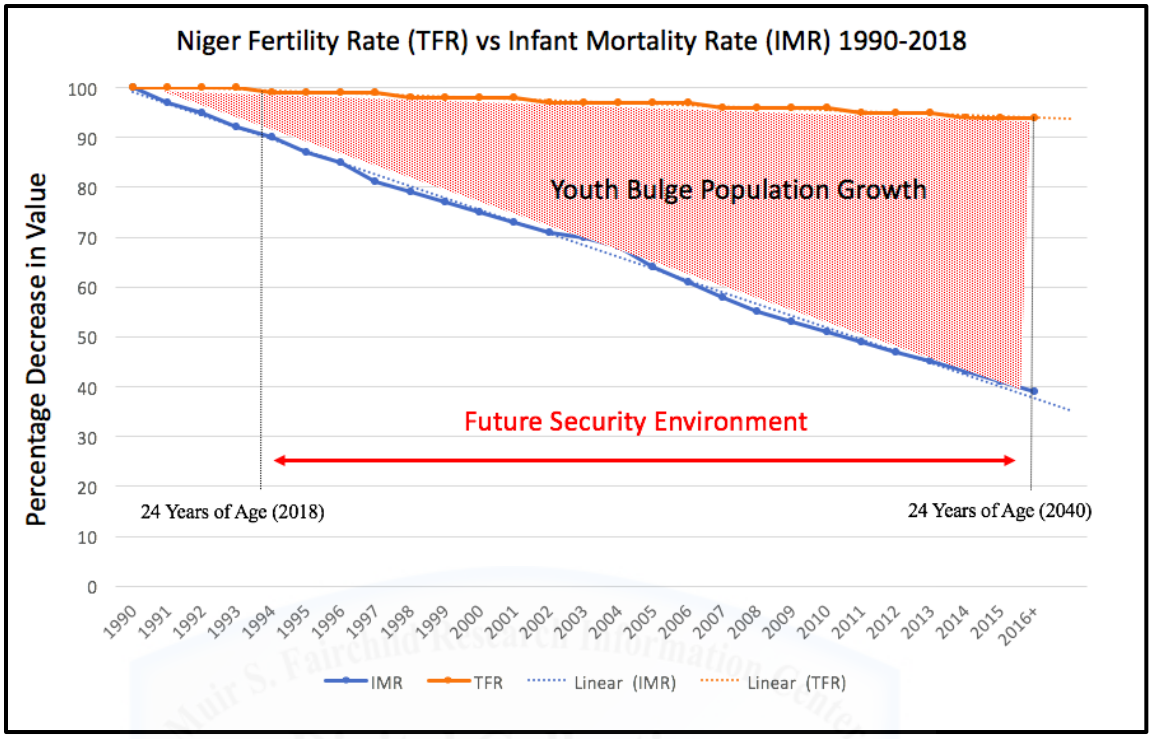


Source: CIA World Factbook- Niger and U.S. demographics.

In the last 25 years, Niger has shifted from leading the highest IMR percentage as a country to being close to par with the world average. The result of this is an abnormal growth rate or "bulge" in population that will likely not see an apex for several years if the decreasing IMR trend continues downward. Niger remains one of the poorest countries in the world since gaining independence, yet has experienced this significant decline in IMR normally seen by a country with a much more stable infrastructure, security, and economic stability. The out-growth from this paradox is Niger has an extreme abundance of youth growing at an increasing pace without the necessary security structure to support it, creating a catalyst for instability and violence.

[14] CIA World Fact Book, "Infant Mortality Rate," 2017. https://www.cia.gov/library/publications/the-world-factbook/rankorder/2091rank.html

Table 4: Relationship of Niger's Fertility Rate/Infant Mortality Rate



Source: *TFR and IMR graph by author. Values from World Bank.*

Prospect for Instability, Insurgency, and Recruitment

Niger's growing youth cohort is increasingly straining the country's economy as evident with its sustained low GDP per capita. I argue this will create a significant prospect of future instability and political violence as the above social science literature suggests. Political scientists James Fearon and David Laitin published a widely cited study of internal factors that increase a country's likelihood of insurgency and state collapse. Their research concluded economic motivations, rather than ethnicity were the primary driver of rebellion and insurgency. When GDP per capita increased by only $1,000 USD in a developing country, they determined a nation state had a 35% less chance of experiencing civil war. These findings show a country with extremely low

GDP per capita directly influences favorable conditions towards insurgency and rebellion.[15]

In addition to Fearon and Laitin's research, Paul Collier and Anke Hoeffler sought to understand why populations initiate rebellion and instability against a sovereign state. Their research concluded that rising incidents of rebellion are linked to circumstances generating profitable opportunities, supporting the argument of economic greed as a motive.[16] The relationship between opportunity cost and greed as a motive from both Fearon and Laitin and Collier and Hoeffler demands more attention. Understanding Niger's economic situation combined with its long history of political fragility and weak security structure are necessary to prevent strategic surprise on the periphery.[17]

VEO

Niger's government has been increasingly engaged in combat operations against VEOs since 2015.[18] According to the Institute for Economics and Peace 2016 Global Terrorism Index, a yearly comprehensive analysis study on the impacts of terrorism spanning over 163 countries, Niger is one of the fastest growing countries regarding the rise of terrorism in the world. In 2015, Niger ranked 16 of 163 countries jumping 35 positions from its 2014 ranking of 51. The world index report concluded of all global terrorist attacks, four organizations were primarily responsible and the most lethal- Taliban, Boko Haram, IS, and al Qaeda. The latter three groups are established in Niger.

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[15] James Fearon and David Laitin, "Ethnicity, Insurgency, and Civil War," (Cambridge University Press 2003), 2-5. https://www.cambridge.org/core/journals/american-political-science-review/article/ethnicity-insurgency-and-civil-war/B1D5D0E7C782483C5D7E102A61AD6605

[16] Paul Collier and Anke Hoeffler, "Greed and Grievance in Civil War," (2004), *Oxford Economic Papers*, no. 56, (Oxford University Press) 561-590.

[17] Collier & Hoeffler, 569.

[18] International Crisis Group, "Niger and Boko Haram: Beyond Counter-insurgency," February 2017, 1-16. https://www.crisisgroup.org/africa/west-africa/niger/245-niger-and-boko-haram-beyond-counter-insurgency

Boko Haram, translated from the local Hausa language "Western education is a sin," is a direct threat to Niger's future security environment. A large-scale effort to thwart Boko Haram by the country's government is underway, since the terrorist group started occupying the Diffa region in 2014. Prior to the death of Boko Haram's original founder, Mohamed Yusuf recruited numerous young Nigerien males seeking business opportunities. The organization's current leader, Abubakar Shekau, has been insidiously gaining strength by establishing lines of communication throughout southeastern Niger. The violence and instability has led to hundreds of thousands of internally displaced peoples (IDPs) in the Diffa region, causing Niger's government to declare a state of emergency since 2015.[19]

Boko Haram is not the only group to recruit Niger's emerging youth. Offshoots of the Islamic State (IS) have infiltrated Niger and greatly expanded its influence in sub-Saharan Africa since 2016.[20] IS West Africa militants responsible for the October attack on U.S. troops have also taken responsibility for other violent attacks both inside Niger and its neighboring countries Mali and Burkina Faso. IS factions operate along Niger's western and northwestern borders, staging violent attacks against the local population.[21] The IS presence in Niger further complicates the country's ability to provide a stable base for economic and security development.

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[19] Ibid.

[20] Jason Warner, "Sub-Saharan Africa's Three "New" Islamic State Affiliates, vol. 10, no. 1, (2017) *Combating Terrorism Center- West Point* (Sentinel). *https://ctc.usma.edu/sub-saharan-africas-three-new-islamic-state-affiliates/*, see also Reuters Staff, "Islamic State affiliate claims deadly attack on U.S. troops in Niger," *Reuters* January, 2018, 1-4. https://www.reuters.com /article/us-niger-security/islamic-state-affiliate-claims-deadly-attack-on-u-s-troops-in-niger-idUSKBN1F20L3

[21]Jacob Zenn and Abdou Cisse, "How al-Qaeda Will Benefit from Islamic State's Greater Sahara Province," *The Jamestown Foundation-Global Research and Analysis, Terrorism Monitor* vol. 15 no. 1 (2017). https://jamestown.org/program/al-qaeda-will-benefit-islamic-states-greater-sahara-province/

If Boko Haram and ISGS were not already a significant problem set, Al-Qaeda has also become a prominent player in Niger over the last decade. Originating out of Algeria, Al-Qaeda in the Islamic Maghreb (AQIM) has established an insurgent foothold in Niger and surrounding countries. AQIM is a Salafi-jihadist terrorist organization carrying out attacks throughout both Niger and the Sahel and have trained thousands of militant fighters migrating to Iraq to wage war against the U.S. and its coalition. AQIM's goal, much like Boko Haram, is to rid sub-Sahara and northern Africa of western ideology and overthrow any form of government posing a threat to Sharia law. It is believed that many of AQIM's leaders engaged in combat with the mujahedeen alongside Osama bin Laden during the Afghan war against the Soviets.[22]

The belief that low barriers to entry regarding VEO recruitment on Niger's youth bulge described throughout this section bears consideration. The decision to resort to violence for survival, whether indiscriminate or discriminate, has been identified throughout world history. Stathis Kalyvas, in *The Logic of Violence in Civil War* asserts a combined effect from the reduction in available benefits, increased presence of violence, and the civilians' orientation toward survival is a situation where effective threats translate into collaboration. He further argues that this collaboration and associated threats hinge upon security and control.[23]

Kalyvas' observation on the impact of scarce resource, political violence, and survival in relation to security and control is fundamental to understanding Niger's security challenges due to the social implications and geographical constraints previously described. This

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[22] Zachary Laub and Jonathan Masters, "Al-Qaeda in the Islamic Maghreb," *Council on Foreign Relations*, 2015 1-8. https://www.cfr.org/backgrounder/al-qaeda-islamic-maghreb

[23] Stathis Kalyvas, *The Logic of Violence in Civil War,* (Cambridge, UK: Cambridge Press 2006), 117.

perhaps explains how VEOs have increased their presence throughout the Sahel, able to operate within the seams where security is weak due to the vast terrain and lack of control. With such a vast territory, the government and the ground warfighter's ability to effectively secure its borders are extremely limited, shedding light on the need for increased capabilities in a supporting domain- the air.

Figure 4: Smugglers transiting Agadez, Niger towards Libya (2015)
Source: Conor Gaffey, Newsweek.

Chapter 4

A Naval Strategy for an Airpower Dilemma

Parts of Africa remain a battleground between ideologies, interests, and values: equality, prosperity, and peace are often pitted against extremism, oppression, and conflict. Today, transregional VEOs constitute the most direct security threat to the United States.

- Gen. Waldhauser, Commander U.S. AFRICOM, 2017.

Gentlemen, we are out of money…now we have to think.

- Sir Winston Churchill, World War II.

If Niger were able to induce a measure that lowered its fertility rate today through family planning education or government policy, the country still faces a massive pool of youth for low-cost recruiting by VEOs spanning the next two decades. It is unlikely that a significant shift towards improved security and infrastructure without the continued help from the U.S., IC, and regional partners will occur in the near term. Therefore, this significant challenge requires careful attention using a whole of government approach to prevent Niger's youth cohort from being vulnerable to recruitment. By understanding Niger's social challenges and youth bulge implications, a military strategist can develop pathways of success that maximize effects on enhancing security while minimizing its footprint in the region, allowing other instruments of power to be effective. Clausewitz ascribed to this approach, necessitating the need to bridge politics with military application aimed at providing cohesion between a country's population, governance, and security. If Clausewitz' trinity of people, governance, and security were envisioned as a triangle, and that triangle were twice the size of Texas (as the case with Niger), a

military strategist can quickly see the need to bolster security in the air domain to support this whole-of-government effort.[1]

Tyranny of Distance

During the deadly October 4th attack in Niger, the Green Beret team requested air support one hour into the fire-fight with ISGS militants. It took 90 minutes for U.S. drones to arrive on scene once air support was requested. French Mirage fighter jets responded in 47 minutes but could not locate the friendly forces and conducted several "show of force" low flyovers.[2] Two and a half hours from *call-for-fires* for U.S. airpower to arrive on scene is not only problematic for any warfighter, it is dangerous.[3] This highlights three very important challenges regarding air support in a sub-Saharan country like Niger. First, the current Air Force capability and capacity operating overhead in Niger's airspace was unable to deliver effects when requested. Second, the airpower that arrived on scene during the fire fight was from a partnered military force, highlighting a lack of U.S. assets available in theater. Third, the time it took French fighters to respond sheds light on the tyranny of distance presented by the geographical terrain in the Sahel region.[4]

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[1] Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1976), 87-89, 605.

[2] U.S. Department of Defense, "Niger Report Highlights Bravery of U.S. Troops, Notes Training, Planning Deficiencies," May, 2018, 1-3. https://www.defense.gov/News/Article/Article/1517497/niger-report-highlights-bravery-of-us-troops-notes-training-planning-deficienci/

[3] Fox News, "Pentagon updates Niger ambush timeline, says US troops called for air support hour after attack," October, 2017, 1-6 http://www.foxnews.com/world/2017/10/23/pentagon-updates-niger-ambush-timeline-says-us-troops-called-for-air-support-hour-after-attack.html. See also Helene Callimachi and Helene Cooper, "An Endless War: Why 4 U.S. Soldiers Died in a Remote African Desert," *The New York Times*, 1-12, February 2018. https://www.nytimes.com/interactive/2018/02/17/world/africa/niger-ambush-american-soldiers.html

[4] This analysis is not intended to undermine any current planning efforts taking place to close these deficiency gaps identified by the author, nor does it attempt to highlight the manner in which air support was and is conducted in Niger.

Airpower delivers effects to the warfighter at minimal cost in terms of risk. This belief carries the caveat when operating in a non-contested environment, meaning a low risk of an air or ground threat to the operator. The current terminology used for this discussion is *low-intensity conflict* or *permissive airspace environment*. Although drones appear as a viable option in an environment like the Sahel due to intelligence, surveillance, and reconnaissance (ISR) and kinetic capability, delivering these effects in a troops-in-contact (TIC), time sensitive targeting (TST), or other dynamic targeting (DT) situation is challenging to say the least. In addition, the speed these drones operate could be problematic in a country like Niger where large swaths of territory may need to be covered quickly to get to the warfighter.[5]

America's traditional fighter community has spent the last 17 years in the Middle-East and South Asia delivering effects with precision against VEOs in Iraq, Afghanistan, and Syria. This capability has only been enabled by the country's fleet of tankers providing the fuel to get these aircraft to the fight. Assuming the U.S. Air Force has a surplus of tankers to support a new campaign in the Sahel, specifically Niger, this may not be the most cost-effective solution. The closest base an aircraft tanker would realistically launch and recover from is Moròn Air Base, Spain, 1700 miles from central Niger. This distance equates to approximately $140,000 per tanker, per mission, without accounting for

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Instead, by using media reports released on the October attacks from online sources, an analysis using the political, social, and economic conditions resulting in Niger's fragility and lack of security highlight the demand signal for increased air support in an advise and assist role, in which the following sections attempt to conceptualize future options for the warfighter.

[5] The U.S. Air Force MQ-9 "Reaper" drone can cruise at 200kts. This speed reduces with increased payloads due to weight and drag, limiting the speed in which air support may be needed for the warfighter. For more information on drone limitations, see also U.S. Air Force Fact Sheet Website: *MQ-9 Reaper,* September 2015, 1-2 http://www.af.mil/About-Us/Fact-Sheets/Display/Article/104470/mq-9-reaper/

any fuel offload to fighter aircraft once overhead.[6] Unless there is a major pivot in operations from the Middle-East or other global demands freeing up the U.S. Air Force's tanker fleet, it is unlikely for this to be a realistic nor cost-effective option, requiring a different strategy to be considered.

Without a sustainable tanker capability, the Air Force could operate its traditional fighter aircraft in Niger augmenting the drones currently in theater, however, this additive capability would be limited. Instead of a response time traveling at 200 KIAS (roughly 4 nautical miles per minute at medium altitude) as advertised with a common military drone, a traditional fighter aircraft could respond much faster with ability to operate supersonic (>10 nautical miles per minute). The significant problem with this is that Niger lacks well-positioned airfields suitable for traditional fighter aircraft launch and recovery operations. There are currently only two airfields with runways greater than 8,000 feet required for these aircraft- Diori Hamani (Niamey) and Agadez.[7]

The following image portrays the tyranny of distance dilemma caused by Niger's vast countryside. Using a common fighter aircraft such as an F-16, the dark blue shaded region depicts a ten-minute geographical response radius at operating altitude if flying directly overhead a suitable airfield. The light blue region depicts an approximate range for flight, provide air support for approximately thirty minutes, and return to base carrying enough fuel to divert to an alternative airfield in the event of base closure.[8] With Boko Haram emerging from the south-east part of the country, AQIM operating along the northwest border, ISGS emerging in the northern Sahara region, and

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[6] USAF KC-135R 2012 Operating Cost-Per-Flying-Hour (CFPH) used. For more detailed information on CFPH for 4th and 5th generation fighters, reference Thompson, Mark, "Costly Flight Hours," *Time*, April 2013, 1-3. http://nation.time.com/2013/04/02/costly-flight-hours/

[7] For more information on Niger's civil and military airfields, see also World Aeronautical Database Website, *Niger*, 2018. http://worldaerodata.com

[8] World Aeronautical Database Website, *Niger*, 2018. http://worldaerodata.com

Libya's border along the northeast, current drone operations along with traditional fighter aircraft may be of limited additive value.

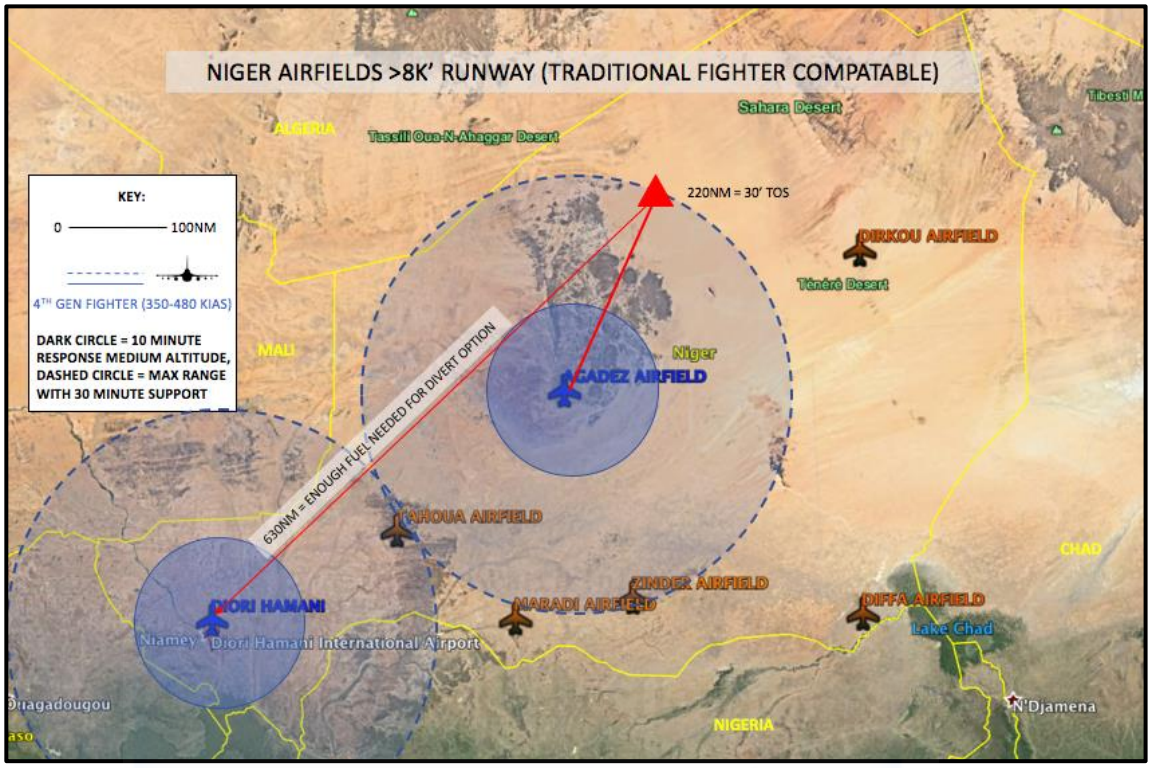

Figure 5: Traditional Fighter Range Without Tanker Support
Source: Modified from Google Earth- Rings, arrows, symbols and key composed by author.

A Case for Corbett

How does a military strategist develop a solution that creates long-term security and stability with the challenges listed above? How does the U.S. ensure that partnered nations in the Sahel have the air support required to disrupt and deny a transnational threat that prevents Niger's 15 million youth from recruitment into VEOs? In addition to both of these challenges, how does one then bridge these toward a solution where African nations are fighting African conflicts? This 21st century problem in a land-locked country may best be approached with a 19th century maritime naval strategy. Captain Julian S. Corbett, a British naval officer and historian wrote *Classics of Sea Power-Principles of*

Maritime Strategy addressing a problem in the sea domain very similar to the air domain over Niger and Sahel.

Instead of massing at a decision point to fight a great naval battle with limited amounts of ships, Corbett believed concentration was temporal between mobilization and mass, allowing the strength of a fighting force to remain intact by being distributed with a common purpose. Without a homogenous body and instead being composed of a compound organism with a common center, a fighting force could yield the same effects of a traditional, more rigid construct by being elastic enough to cover a wide operating area without sacrificing the mutual support of its parts. The sea's tyranny of distance and ability to fight without the need of an expensive armada is overcome by flexible, agile response of a middle-weight fighting force.[9]

This strategic concept envisioned in the sea domain can be applied to the air domain throughout the Sahel region. As the U.S. Air Force sharpens its talons developing its 5th generation fleet for high-intensity conflict, it may behoove the service to consider this naval strategy to support the ground warfighter against a persistent VEO threat. Corbett's approach in the maritime domain afforded the ability to operate just as effectively with a more agile naval force capable of disrupting and denying the enemy's lines of communications at a place of choosing, instead of the traditional large maritime battles. The modern-day Marine Air Ground Task Force (MAGTF) is built around this concept that enables its force to maneuver in a similar nimble fashion once distributed throughout the littorals.

The U.S. Air Force is currently testing a new aircraft platform called "OA-X", also referred to as the *Light Attack Aircraft (LAA)*. It operates at speeds one-and-a-half times the U.S. Air Force's standard

[9] Julian Corbett, *Classics of Sea Power- Some Principles of Maritime Strategy* (Naval Institute Press 1988), 131-132.

drone fleet, has nearly twice the endurance as a traditional fighter aircraft, costs approximately one-sixth to operate, and can launch and recover in less than 3,000 feet- less than half of the distance needed for modern fixed-wing military aircraft. The concept design allows it to carry a mixture of modern precision ordnance from precision guided munitions (PGMs) and laser rockets to general purpose bombs and .50 caliber machine gun.[10]

Perhaps the most significant feature of this aircraft, however, is its intelligence, surveillance, and reconnaissance (ISR) capability with combined communication architecture. LAA offers modern ISR requirements with an electro optical and infrared targeting pod capable of laser designation and target illumination fully compatible with U.S. and NATO Joint Terminal Attack Controller (JTAC) systems. It is also fully interoperable amongst partnered nations via an exportable network communication capability. This capability could allow partnered nations to communicate with each other both air-air and air-ground, providing true joint and coalition interoperability amongst any participating country in a multi-domain fashion.[11] The figure below shows the same map of Niger using existing airfields already established capable of LAA launch and recovery operations:

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[10] For more detailed information on OA-X capabilities, see also Textron Aviation AT-6 "Wolverine" official website- Characteristics and Performance. Textron Aviation, "Beechcraft AT-6, Counter Insurgency," 2018. http://defense.txtav.com/en/counter-insurgency

[11] Valerie Insinna, "US Air Force selects Textron's Scorpion jet and AT-6 for light attack aircraft demo," *Defense News*, May 2017, 1-4. https://www.defensenews.com/air/2017/05/15/us-air-force-selects-textron-s-scorpion-jet-and-at-6-for-light-attack-aircraft-demo/ see also U.S. Secrety of the Air Force Public Affairs. "Air Force announces next steps in light attack experimentation," February 2018, 1-3. www.af.mil/News/Article-Display/Article/1431104/air-force-announces-next-steps-in-light-attack-experimentation/

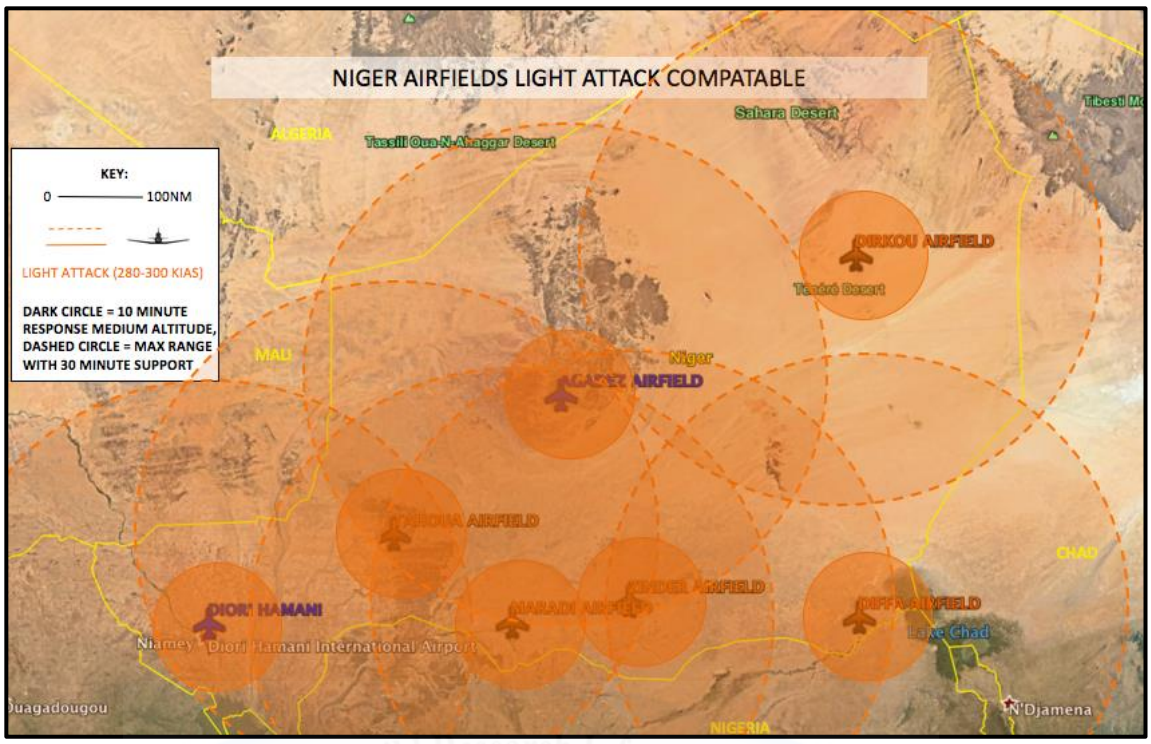
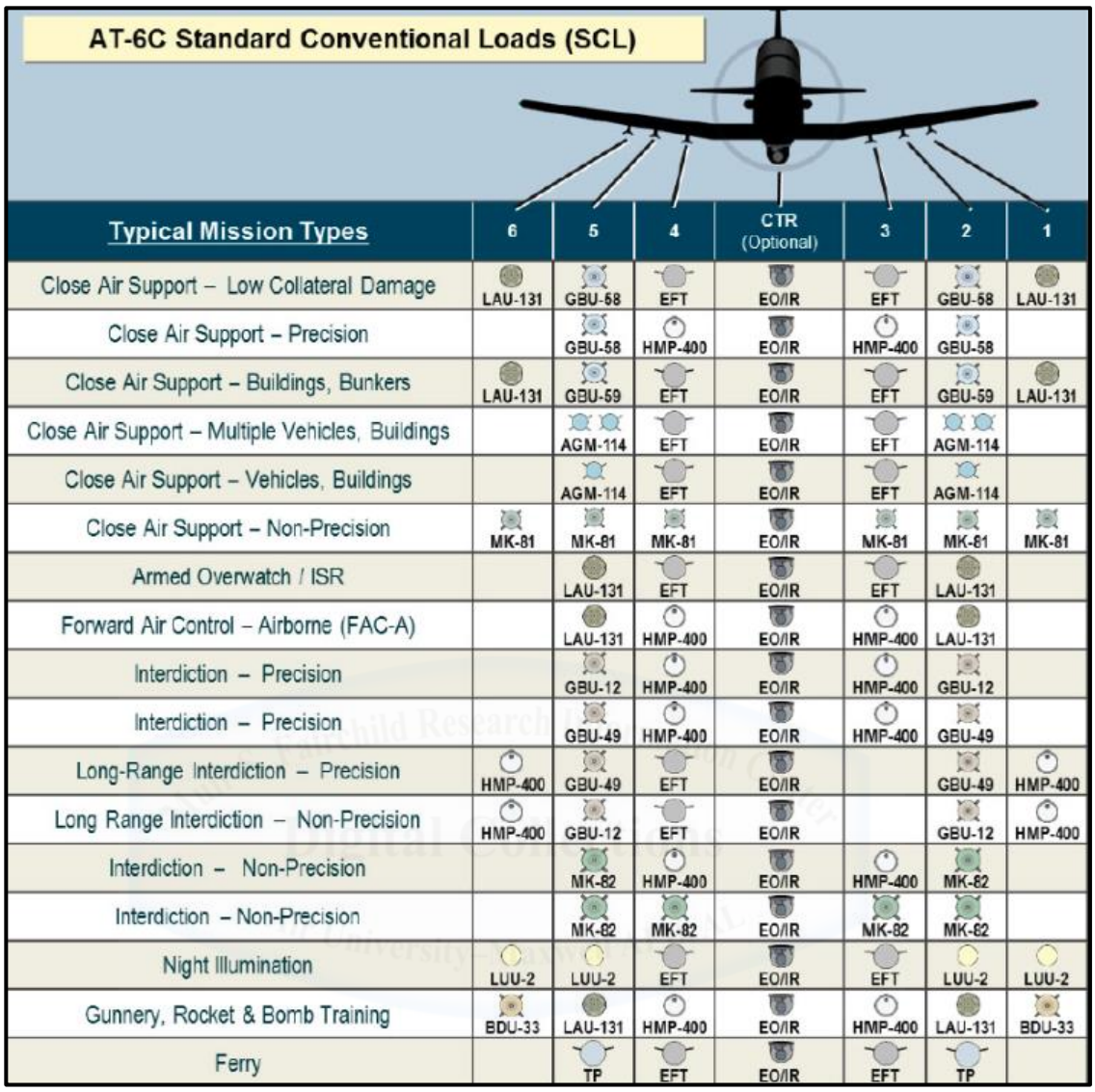


Figure 6: Light Attack Aircraft Operating Range over Niger
Source: Modified from Google Earth- Rings, arrows, symbols and key composed by author.

Without having to create any additional bases in Niger, the flexibility and agile capability of the LAA allows five additional launch and recovery options enabling overlapping air support to the warfighter throughout the entirety of the country. Distributed operations that Corbett envisioned are already built in this design using Niger's existing basing construct. This would require minimal airfield construction and host nation support to support logistical fuel, security, and armament depots for multiple launch and recovery operations, or single missions if conducting forward armament refueling point operations (FARP). This concept enables an operational mindset adaptive to the change of pace of the regional warfighter by lily-padding throughout the Sahel.



Typical Mission Types	6	5	4	CTR (Optional)	3	2	1
Close Air Support – Low Collateral Damage	LAU-131	GBU-58	EFT	EO/IR	EFT	GBU-58	LAU-131
Close Air Support – Precision		GBU-58	HMP-400	EO/IR	HMP-400	GBU-58	
Close Air Support – Buildings, Bunkers	LAU-131	GBU-59	EFT	EO/IR	EFT	GBU-59	LAU-131
Close Air Support – Multiple Vehicles, Buildings		AGM-114	EFT	EO/IR	EFT	AGM-114	
Close Air Support – Vehicles, Buildings		AGM-114	EFT	EO/IR	EFT	AGM-114	
Close Air Support – Non-Precision	MK-81	MK-81	MK-81	EO/IR	MK-81	MK-81	MK-81
Armed Overwatch / ISR		LAU-131	EFT	EO/IR	EFT	LAU-131	
Forward Air Control – Airborne (FAC-A)		LAU-131	HMP-400	EO/IR	HMP-400	LAU-131	
Interdiction – Precision		GBU-12	HMP-400	EO/IR	HMP-400	GBU-12	
Interdiction – Precision		GBU-49	HMP-400	EO/IR	HMP-400	GBU-49	
Long-Range Interdiction – Precision	HMP-400	GBU-49	EFT	EO/IR		GBU-49	HMP-400
Long Range Interdiction – Non-Precision	HMP-400	GBU-12	EFT	EO/IR		GBU-12	HMP-400
Interdiction – Non-Precision		MK-82	HMP-400	EO/IR	HMP-400	MK-82	
Interdiction – Non-Precision		MK-82	MK-82	EO/IR	MK-82	MK-82	
Night Illumination	LUU-2	LUU-2	EFT	EO/IR	EFT	LUU-2	LUU-2
Gunnery, Rocket & Bomb Training	BDU-33	LAU-131	HMP-400	EO/IR	HMP-400	LAU-131	BDU-33
Ferry		TP	EFT	EO/IR	EFT	TP	

Figure 7: LAA Typical Standard Conventional Loadout (SCL)
Source: Textron Aviation Website, 2018.

The strategic impact that LAA can provide to the combatant commander is significant for U.S. security cooperation with partnered nations in the Sahel region. When compared to the U.S. 4th and 5th generation fleet, it is far more cost-effective and delivers similar effects against the VEO threat. It can also meet the demands of the warfighter in the Sahel region and fulfill a swath of mission sets, including ISR, Close Air Support (CAS), Armed Overwatch, Forward, Air Control-

Airborne (FAC-A), and Air Interdiction (AI).[12] More importantly, it creates a long-term security solution in the region that allows African nations the ability to provide airpower under a regional task force construct if the U.S. trains aircrew and then transfers these aircraft to partner nations. By implementing this strategy, the U.S. can continue to disrupt, deny, and degrade VEOs that represent a transnational threat in the near term while simultaneously strengthening partnership amongst African nations in the Sahel.

A *Pivot* in Strategy

The U.S. Air Force senior leadership has recognized the need for a shift in mindset as to how future operations are conducted due to vulnerabilities to its bases in certain areas of responsibility (AOR). Bases in the Pacific such as Guam and Kadena are now considered vulnerable to attack by China, requiring strategists to consider alternative solutions for air dominance without these bases. In the near-term, the service is asking every Airman to be innovators while it pursues long-range precision strike capability without these traditional bases.[13]

There is a difference between advocating for a shift in mindset and actually adopting this shift in mindset. Air Force leadership has been slow to adopt this change due to an underdeveloped strategy on *how* to conduct effective operations without the service's tanker support and fixed bases with long runways. For the last three decades, the Air Force has enjoyed the comforts of traditional bases and air bridges to get into

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[12] Textron Aviation, "Beechcraft AT-6, Counter Insurgency," 2018. http://defense.txtav.com/en/counter-insurgency

[13] In the spring of 2018, SAASS Class XXVII was visited by U.S. HAF senior leadership advocating the need for innovation and a shift in mindset to counter China's emerging capabilities that now hold Guam and Kadena Air Force Bases at risk. In addition, the Chief of USAF Scientific Advisory Board (SAB) visited SAASS and also advocated the need for future technology and innovation that ensures Air Superiority in a projected high-intensity conflict. While there is much concern with the tyranny of distance dilemma with China in the Pacific, there should be equal consideration and concern on how to conduct this in a low-intensity conflict with an aging tanker fleet.

and out of the fight. It is time for a pivot in strategy.

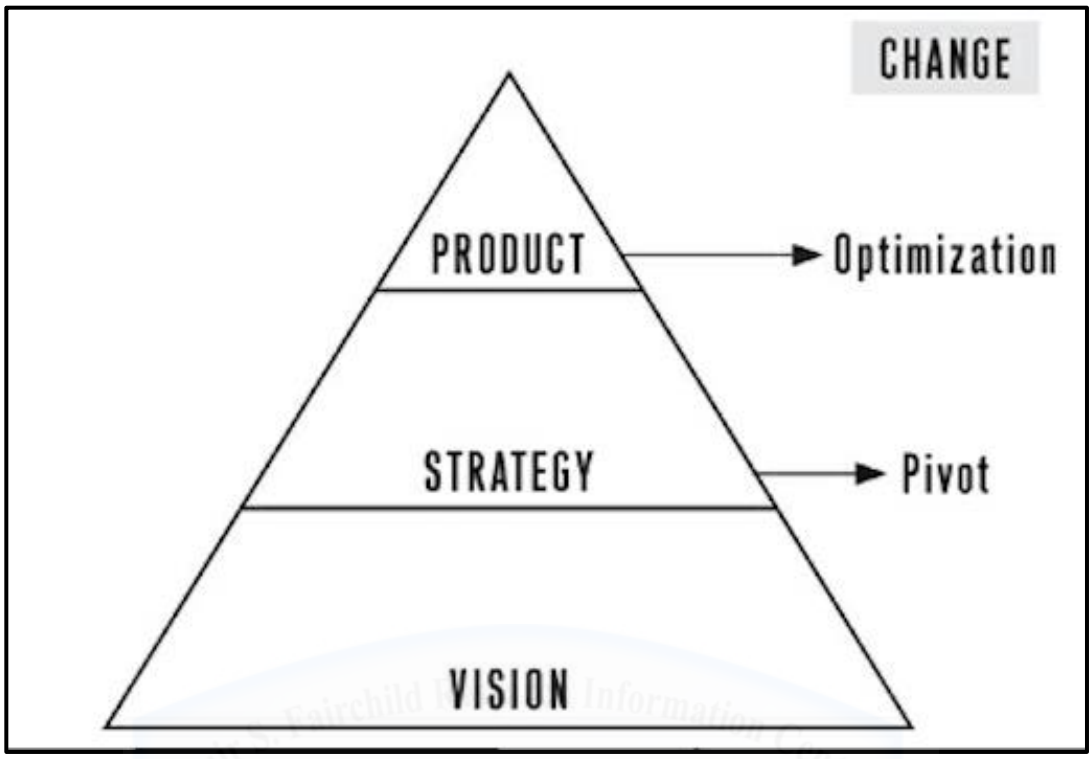

Figure 8: The Pivot- Change in strategy without change in vision

Source: *Eric Ries, The Startup Way- How Modern Companies Use Entrepreneurial Management to Transform Culture and Drive Long-Term Growth,* (NY: Crown Publishing 2017).

Business entrepreneur Eric Ries, author of *The Startup Way* argues that in order for a culture to successfully change strategy without sacrificing its vision, a forceful pivot is required. Without this pivot, the product a company is trying to deliver to the consumer will become useless. Ries further argues that in order to be successful with this approach, it is best to start *small* and scale *fast.*[14] A prime example of this pivot is Elon Musk's Space X Corporation. Musk initially started small by developing a cost-effective solution putting payloads into space that outpaces industry competitors by recycling rocket components when

[14] Ries, Eric, *The Startup Way- How Modern Companies Use Entrepreneurial Management to Transform Culture and Drive Long-Term Growth,* (NY: Crown Publishing 2017), 142-144.

launched. Space X has become so effective at producing a product for the consumer, the U.S. Air Force is now struggling to adapt and build satellites to match the speed, innovation, and efficiency requirements that Space X requires in order to stay ahead of its competitors.[15] If the Air Force wishes to keep its current vision of *The World's Greatest Air Force- Powered by Airmen, Fueled by Innovation*, new thinking on light attack should be considered in this manner.[16]

A new strategy must be born on both spectrums of conflict. While the Air Force has recognized this dilemma with its traditional bases in the Pacific AOR in a high-intensity conflict requiring development of a new long range bomber, it would make sense that the service also recognizes this dilemma in a low intensity conflict such as the Sahel operating area. The Air Force's current strategy of relying on tankers, 4th generation fighters, and the aging bomber fleet has stalled innovative solutions to support the warfighter against the persistent VEO threat. This innovative paralysis has inhibited the service to adopt an effective strategy that involves starting small and scaling fast.

To successfully pivot towards adopting a new strategy of distributed operations using LAA to solve the tyranny of distance dilemma in the Sahel, the Air Force will be forced to accept more risk at multiple levels. Starting with the tactical level, asking an Air Force operator to conduct a mission, land at an alternative location potentially at risk of an attack, re-fuel and reload without the traditional maintenance and airfield support and take-off again involves greater risk imposed to the aircrew and the unit. At the operational level, the Air

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[15] The Author travelled to visit and tour both Space X Corporation and USAF Space and Missile Command (SMC) in Los Angeles in Spring 2018. For more information on Musk's strategy, see also Ashlee Vance*, Elon Musk- Tesla, Space X, and the Quest for a Fantastic Future* (Harper Collins: NY), 2017, 17, 114-115, 118, 240-241.

[16] U.S. Air Force Website, "U.S. Air Force Vision Statement," 2018. https://www.airforce.com/mission/vision

Force leadership will face increased risk from the decentralized control required of this distributed operational strategy. In order to be responsive to threats, the squadrons that would operate under this construct would be adaptive at the pace of change, which may demand operating in smaller detachments in some situations. Additionally, at the operational level, increased risk stems from the fact LAA squadrons will include inexperienced pilots conducting these missions due to the current Air Force pilot shortage.

Figure 9: U.S. Air Force testing AT-6 LAA, Holloman AFB (2017)
Source: Mike Pietrucha, War on the Rocks. 2017.

Chapter 5

Pathways to Success- Regional Light Attack Task Force

Security operations are executed almost exclusively by the partnered security forces. U.S. Africa Command works with partnered security forces based on their operational needs…African leaders tell us how important it is to develop 'African solutions to African problems.' The framework of By, With, and Through recognizes the importance of partner ownership, which in turn fosters enduring relationships.

- U.S. AFRICOM Posture Statement to Congress, March 13, 2018.

The U.S. Air Force is at war internally regarding its aircrew shortage. As of 2018, the service is over 2,000 pilots short, and in order to reduce that shortage, it is estimated that the service's training pipeline will need to churn out over 1800 pilots per year for the next decade. Currently, the service's training fleet is only capable of producing 1200 pilots per year, leaving a 600-pilot delta and significant strategic problem for fielding any LAA in the future. In February 2018, the Secretary of the Air Force (SECAF) announced a plan that will increase pilot training throughput to 1400 pilots per year, but this still falls short of the baseline number to stop the bleeding of an arterial wound.[1]

Planting the seed: A successful U.S. LAA force

It is unknown if the Air Force will adopt the A-29 or the AT-6 for its LAA. Assuming both are similar in capability, it would make sense for the service to lean towards the AT-6 since it initially uses the same pilot training aircraft. There are simply not enough pilots currently in the Air Force to cross-train directly into the LAA without breaking the service in another platform. This observation is evident with an already 2,000 person aircrew shortage in existing fighter communities. Clausewitz

[1] Stephen Losey, "Air Force 2019 budget will grow pilot training pipeline as service fights severe shortage," *Air Force Times*, February 2018, 1-4. https://www.airforcetimes.com/news/your-air-force/2018/02/13/air-force-2019-budget-will-grow-pilot-training-pipeline-as-service-fights-severe-shortage/

warns that without a proper analysis or theory on the conduct of war, routine methods will tend to take over- even at the highest levels of leadership. If one substitutes Clausewitz' *war* with the service's strategy on its aircrew shortage crisis, the Air Force may fall in the trap of building a LAA community aimed at providing high utilization rates to fix its aircrew shortage. However, this would be a routine method of applying a band aid to an ineffective strategy. It would also derail any successful strategy that focuses on what LAA could be- an agile, lightweight boxer packing a cost-effective punch to be used in a variety of operating environments.[2]

Falling into a trap using LAA as a strategy to fix aircrew shortages would be seriously flawed for several reasons. First, in the initial six years, it would require a significant number of experienced pilots upfront in order to build a LAA community capable of sustaining itself by pulling experienced aircrew from other fighter platforms.[3] Second, it will create a toxic culture requiring the majority of initial aircrew being involuntarily placed into the community to provide the experience needed to train the inexperienced operators. Forcing aircrew into a new airframe at the experienced point in their career will only exacerbate the aircrew shortage problem, which many will have the option to turn down the assignment. Third, it will further stress the existing 4th generation communities, demanding more experienced operators, creating more instability, friction, and worsening retention rates.[4] In order to build a

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[2] Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1976), 153-154.

[3] After undergraduate pilot training, it takes approximately 4-6 years to gain enough experience for an aircrew to become an instructor pilot or systems operator, which will be required to teach the next wave of LAA operators who enter the service.

[4] The Author was an inexperienced fighter pilot stationed in Germany from 2008-2010 during the Transformational Aircrew Management Initiative of the 21st Century (TAMI-21) by the Air Force. This initiative involved taking inexperienced aircrew out of the fighter community for several years to stand up the Air Force's drone community, creating a toxic environment of morale and

successful LAA that does not produce the consequences listed above, the service needs to start as small and fast as possible. This could be done with as little as five LAA squadrons to serve as a foundation for a sustainable regional task force of LAA.

The service may also need to reconsider the undergraduate pilot training (UPT) pipeline during initial startup to speed up capacity. If the Air Force adopts the AT-6 for its LAA, it could pull initial pilot and combat system officer trainees out of the training pipeline early during the end of T-6 training and redirect them to an LAA squadron where these operators fly the exact same aircraft with increased tactical considerations finishing out their syllabus and receiving aeronautical ratings. The LAA training syllabus can be phased in a manner that once a trainee receives their rating, a formal training syllabus covering LAA mission set requirements can immediately follow initial qualification, rapidly accelerating the timeline of normal Air Force pilot production.

The plus side to this strategy is the Air Force will be able to churn out more aircrew at close to half the time it would take for the service to send freshly trained operators who complete the full syllabus with advanced flying training in the T-1 or T-38 aircraft. The negative side of this strategy is that the service will be sending its most inexperienced aircrew to conduct distributed operations in a combat environment which may be inherently riskier than the current operating environment expected of its experienced operators today. The LAA may be a simpler aircraft to operate and have reduced risk management with a two-person crew. However, the manner in which LAA could be used to be effective in

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manning issues that the Air Force is still recovering from today. If the service attempts this with the experienced pool of tactical aviators with fielding LAA, it will have devastating effects on the existing aircrew shortage problem that may break the service. For more information on the TAMI-21 program and effects it had on aircrew shortages, see also U.S. Rand Report, "Fighter Drawdown Dynamics- Effects on Aircrew Inventories," Ch 1-4, 2009. https://www.rand.org/content/dam/rand/pubs/monographs/2009/RAND_MG855.pdf

a region like the Sahel poses significant amounts of Airmanship and decision making on inexperienced aircrew during complex missions in austere locations. This risk may also be mitigated with a change in the way the Air Force normally deploys its squadrons.

Changing the deployment construct

This chapter has identified a critical deficiency in Air Force aircrew shortage that bears careful consideration as U.S. LAA is dependent on the service bridging a successful strategy to enable a regional LAA task force. Currently, the Air Force strives to keep a 1:4 deploy to dwell ratio on its fighter aircrew and tails, equating to roughly one 6-month deployment every two years, but certain aircrew communities have experienced a 1:2 ratio since 2014 due to the service's inability to retain its operators. [5] If the service attempted to adopt a 1:4 dwell to deploy with LAA, it would normally need at least four operational squadrons to fulfill this requirement the way it doctrinally deploys (entire squadron of aircraft and aircrew). Anything less than this number would require the squadron's aircrew to deploy at an increased amount in relation to the rest of the service, creating significant recruiting and retention problems in the future. This can change if the service adopts a new construct.

With over 2,000 aircrew short (and climbing), the ability to produce the amount of aircrew to fill four squadrons of tails is a challenge, which requires a change in mindset on how the service constructs and deploys its future LAA squadrons. This especially holds true since the LAA community will consist of a large pool of inexperienced operators until it can grow and sustain itself as a community taking several years. With these considerations in mind, the U.S. will need a LAA formal training unit (FTU) to train its operators as well as a coalition training squadron that builds a Sahel region task force

[5] Stephen Losey, "Air Force budget calls for 325,100 airmen in FY18," *Air Force Times*, May 2017, 1-3. https://www.airforcetimes.com/news/your-air-force/2017/05/23/air-force-budget-calls-for-325100-airmen-in-fy18/

of sustainable LAA operations. In addition to these two FTU's, the service could build three operational squadrons instead of four, and satisfy the desired 1:4 dwell deploy ratio if it deployed a detachment of LAA from each squadron as well as a "flight" of aircrew.

The U.S. Air Force keeps its heritage in fighter squadrons having flights within the squadron, but for all intents and purposes, this present-day intra squadron construct is for administrative responsibilities within the unit. The LAA squadrons may benefit by taking these flights and turning them into actual deployable elements within the squadron, enabling the ability to appropriately balance inexperienced and experienced aircrew. After the initial standup of the service's three operational LAA squadrons, the community could deploy one detachment of its aircraft and one flight of aircrew to meet in theater along with detachments from the two-other operational LAA squadrons. This concept would free up command authority at the squadron level enabling a commander to send the right aircrew while simultaneously managing home-station requirements and training upgrades to build a long-term healthy LAA fleet.

There are pros and cons to this concept, which when paired against the service's current problem of aircrew shortage and inability to create these squadrons under existing shortages, may be worth considering. Additional pros aside from the benefits of increased command authority at the squadron level, provides an approach where the service can focus on building a sustaining capacity and experienced operators in garrison while at the same time filling the requirements to conduct required mission tasking down range. It would also allow real time TTPs to flow back to the service's three line squadrons having flights from all of the squadrons operating down range at the same time. This concept creates continuity amongst the squadrons and also enables an extra command billet in theater in addition to the three squadron commanders of the LAA units.

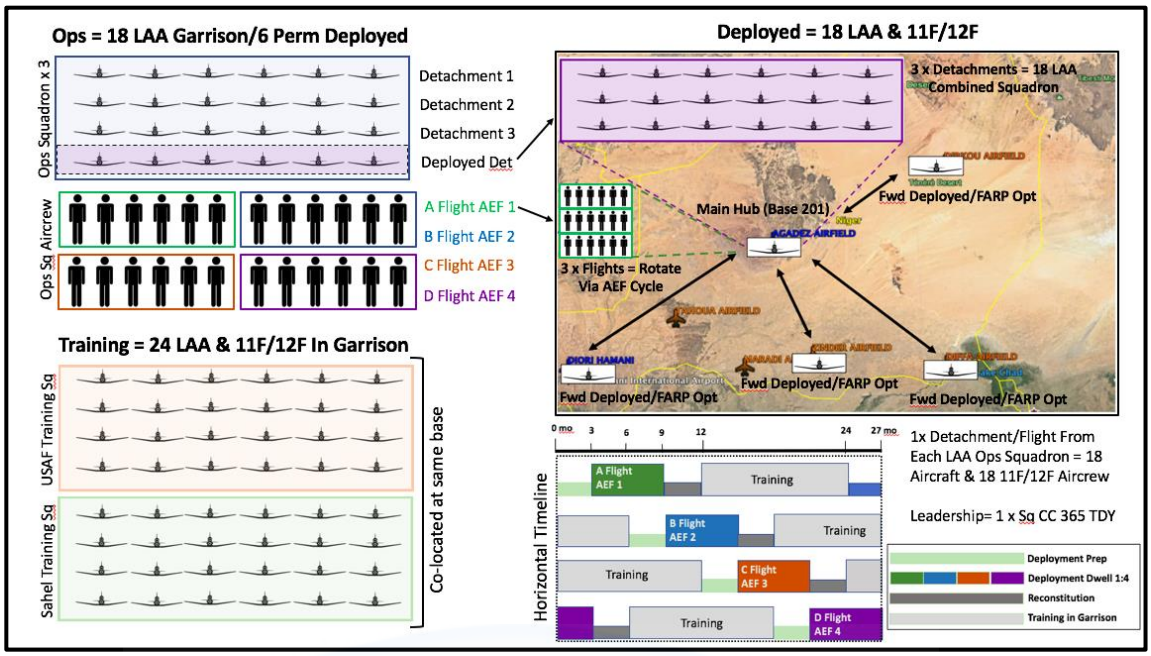

Figure 10: U.S. LAA Concept = 2 x Training/3 x Ops Squadrons
Source: Author's Original Work. This Concept enables the U.S. Air Force to design a LAA fleet with minimal squadrons of tails and aircrew to mitigate the aircrew shortage and budget, while maintaining a 1:4 deploy to dwell ratio. It also enables the fleet in being concept of 18 x LAA to deliver distributed ops and effects to the warfighter as outlined throughout this paper.

The cons to this new concept are obvious increased risk. There is definite benefit of an entire squadron deploying together flying the same tails the operators have flown and trained in. It could be argued, however, that if each LAA squadron were to deploy a flight of its squadron, these aircrew could operate on the same schedule and fly sorties together. This would mitigate risk until enough continuity existed amongst the other squadron detachments to fully integrate as paired formations in the Air Tasking Order (ATO). There is also risk to the garrison squadron commander sending a flight into theater to create a deployed squadron with the other unit's flights under a new commander.

Another risk and potential con to this LAA deployment construct is the maintenance bill required to support a squadron detachment of LAA

(six planes). Current maintenance and personnel unit type codes (UTC) requirements do not linear equate to the percentage of aircraft sent on a deployment. For instance, if a 4th generation fighter squadron deployed a 25% of its aircraft, it would require close to 50% of the maintenance personnel and equipment support package to provide the necessary ability to support sustained operations.[6] With the simple design LAA brings lacking many of the complex defensive and offensive sensors as well as having a prop versus turbine engine (assuming the Air Force keeps this platform simple in design), a large percentage of this maintenance bill could be reduced, making a detachment deployment and permanent fleet downrange construct possible.

This concept is a major pivot from the service's current squadron construct and methods of deployment, and if the service to resolve its aircrew shortage problem, this pivot may be required. Although this may seem too complex or risky, there is historical precedent. Two years prior to the U.S. entering WWII in December of 1941, 244 American aviators illegally joined Britain's RAF, forming three fighter squadrons of Hurricane and Spitfire aircraft. U.S. operators took it upon themselves to deploy from all around the U.S. to remote locations on the British countryside to fight a persistent threat- the German Luftwaffe. These squadrons (*No. 71, 121,* and *133*) consisted of an all-volunteer force of operators rotating in and out of theater throughout the war to defend a nation abroad during a time of need.[7] These units would later be recognized and referred to as the famous *Eagle Squadrons*.

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[6] For more information on U.S. Air Force UTC design, structure, and tailoring, see U.S. Air Force Instruction 10-401, "Operations," *Air Force Operations Planning and Execution, December*, 2006, Ch 4-5. http://static.e-publishing.af.mil/production/1/af_a3_5/publication/afi10-401/afi10-401.pdf

[7] For more detailed information on the Eagle pilots and Number 71, 121, and 133 squadrons contributions to airpower history, see also Philip Caine, *Eagles of the RAF- The World War II Eagle Squadrons* (Washington DC: NDU Press 1991), 118-124.

Figure 11: No.71 Eagle Squadron Scrambling for the Skies (1940)
Source: Ewen Menzies, Fighter Sweep.

These warriors operated foreign equipment with little to no flying training, slept in field quarters, and ate in common mess halls allowing TTPs to be shared in order to increase chances of survival the next day.[8] During the greatest air battle in history over Britain in 1940, seven American aviators took to the skies to defend the shorelines in which only one survived- John Haviland. These operators knew the risks involved, and boldly faced a violent threat in defense of another country. Haviland had only 20 hours of flying fighters prior to the battle.[9]

The history of these brave operators does not directly equate the LAA concept to the historic Eagle squadron. The point to be had is that

[8] Philip Caine, *Eagles of the RAF- The World War II Eagle Squadrons* (Washington DC: NDU Press 1991), 52-55, 130-137.
[9] Alex Kershaw, *The Few: The American "Knights of the Air" Who Risked Everything to Save Britain in the Summer of 1940* (Philadelphia, PA: Da Capo Press 2006), 235-237.

the Eagle squadrons were constructed in a manner having tails permanently deployed in theater in a distributed manner, and the squadrons were manned by an all-volunteer force. This volunteer force often consisted of aircrew with very little experience prior to their first combat mission. The missions flown were perhaps more dangerous than today, requiring astute Airmanship in both a tactical environment and in administrative phases of flight. If the U.S. Air Force successfully builds a small LAA fleet of tails and operators with the recommendations above, it will create a new platform that will attract aviators. By doing so, it can then pivot towards the next phase of strategy to build a regional LAA task force. This may require becoming a regional member of an existing task force in the Sahel.

Building a regional LAA Task Force

Niger is a dual member of two important regional partner security constructs bridging the sub-Saharan belt: the Multi National Joint Task Force (MNJTF) and the G5 Sahel. In 2012, Niger, Cameroon, Chad, and Nigeria launched the MNJTF in order to combine military strengths to combat Boko Haram in the Chad basin. The VEO threat was significant to the point these countries put aside their differences and joined together to fight with common purpose. In February 2017, Niger along with Burkina Faso, Mali, Mauritania, and Chad established the G5 Sahel Joint Force (FC-G5S). This additional regional partnership is backed by a U.N. security resolution with an established headquarters focused on combatting the rise of VEOs emerging across the Saharan beltway.[10] Unlike the MNJTF with a more robust organic militant land force aimed to combat Boko Haram, the FC-G5S is more delicate due to the lack of military capability and rise of multiple VEOs seeking safe-haven across

[10] United Nations Security Council. *7979th Meeting-Resolution 2359*, June 2017, 1-2. https://www.un.org/press/en/2017/sc12881.doc.htm

borders.[11] As valuable as these two regional task forces are in ensuring security in the Sahel, the U.S. is not an official member of either, even though it works closely with in a bi-lateral and multi-lateral manner.[12]

A current obstacle bringing LAA into Niger and the Sahel region under these two partnership constructs is the majority of these countries do not possess a credible air force cadre of pilots or aircraft to operate. Simply selling LAA to these African countries without required support or training would be problematic. If the U.S. became a member of both the MNJTF and the FC-G5S, it could initially deploy and operate LAA aircraft using U.S. tails flown by U.S. operators without delicately thread the needle between its general-purpose force and special operation forces to provide security force assistance in the Sahel.[13] This enables the U.S. to operate in accordance with its own rules of engagement (ROE) scalable to host-nation security cooperation framework amongst each participating country. Niger is a prime choice for a U.S. LAA hub due to its central location as both a MNJTF and FC-G5S member, and the current construction of U.S. Base 201 in Agadez, Niger for future drone operations.[14]

Once the LAA are delivered to theater, these aircraft could

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[11] International Crisis Group. "Finding the Right Role for the G5 Sahel Joint Force," no. 258, December 2017, 1-16. https://www.crisisgroup.org/africa/west-africa/burkina-faso/258-force-du-g5-sahel-trouver-sa-place-dans-lembouteillage-securitaire

[12] For more detailed information on U.S. AFRICOM's role in partnership and security cooperation, visit AFRICOM official website, 2018. http://www.africom.mil

[13] The author is specifically referring to Department of Defense Instruction Number 5000.68, Security Force Assistance (SFA) Policy (4), subsection A-K. For more information on U.S. military SFA roles and responsibilities between general purpose force and special operations forces, see "Department of Defense Instruction 5000.68_Air Force Instruction 16-122" *Operations Supports Security Force Assistance,* certified current 14 December 2016, http://static.e-publishing.af.mil/production/1/saf_ia/publication/dodi5000.68_afi16-122/dodi5000.68_afi16-122.pdf

[14] USA Today. "Why the U.S. military is building a drone base in Niger," March, 2018, 1-3 https://www.usatoday.com/story/news/world/2018/03/02/why-u-s-military-building-drone-base-niger/388234002/

permanently stay because of its low logistical and maintenance footprint and no air-refueling capability. This allows a squadron permanently deployed as a fleet and parceled throughout the Sahel under the FC-G5S and MNJTF security construct, initially flown and operated by U.S. operators. It would take approximately two years from the time these Sahel regional task force operators entered pilot training to qualification for the light attack in theater if the U.S. stood up the training squadron in parallel with its own procurement timeline.

During these first two years, the U.S. could operate *through* the regional task force framework flying LAA tails in Niger and surrounding countries under U.S. ROE, and could disaggregate the squadron into flights appropriately tailored to execute distributed operations. These flights would be distributed in a flexible manner to deliver effects across borders attacking VEO LOCs under task force guidance with oversight from U.S. AFRICOM while providing the Sahel region air support as Corbett envisioned with a naval fleet. As soon as the partnered military operators are trained stateside and ready to operate LAA in theater, the U.S. could modify and sell these aircraft to both Niger and selected partnered task force countries hosting the smaller detachments.

After the initial two years of distributed operations, Niger and surrounding partnered nations would have a viable, credible, cadre of operators trained by the U.S. and ready to fly alongside U.S. operators in theater. The U.S. would be able to phase in its next fleet of LAA as required, and more importantly, shift from operating through the regional task force construct to now operating *with* the MNJTF and FC-G5S partnered members in a supporting role.[15] This two-year point will

[15] Currently, there are three countries in the MNJTF and FC-G5S already pursuing a light attack concept, but lack an overall strategy and structure that the U.S. could provide if it had its own light attack fleet operating as a partnered member. For more detailed information, see Defense Industry Daily, "Super Tucano Counter-Insurgency Plane Makes Inroads in Africa," *Defense*

be a critical juncture using LAA as a strategy in Niger and the Sahel as it would create conditions for a combined regional air campaign involving both U.S. and partnered nation LAA tails and operators.

This phase in the regional air campaign also allows the U.S. to create further pathways of success through bi-lateral agreements with remaining countries in the MNJTF and FC-G5S for follow-on light attack purchases. With Niger and the task force partnered nations having a viable, effective, low-cost aircraft in its inventory, the U.S. could continuously pivot throughout the Sahel. Continuous assessments on measures of performance can scale up or down the amount of U.S. light attack presence throughout the region, creating future conditions that allow air support in the Sahel *by* African nations with minimal U.S involvement in a supporting role.

Successful strategy measured

Albeit limited, the U.S. has already demonstrated the successfulness of LAA at a small scale creating an A-29 squadron stateside that trained Afghanistan pilots in 2014. Once qualified, these Afghan operators returned to their country with the aircraft and a squadron of U.S. operators acting in an air advisory role to successfully combat the VEO threat in 2016.[16] It took approximately two years to create an initial pool of Afghan operators and provide them a capability via LAA to provide security for their country. The A-29 is currently providing security to the Afghanistan people with Afghanistan operators and U.S. air advisors working together as a cohesive team. The U.S. can adapt this successful model to a regional partnership of countries that

Industry Daily, April 2017, 1-4. https://www.defenseindustrydaily.com/super-tucano-counter-insurgency-plane-makes-inroads-into-africa-07348/

[16] For detailed information on the U.S. air advisory role using LAA in Afghanistan, see also Maj Nicholas Ervin, *"The New Air University: The Train, Advise and Assist Mission at a Stateside Air Advisor Wing,"* (Maxwell AFB, Ala.: Air University, 2016).

can provide security to the Sahel region.[17]

[17] The U.S. trained Afghanistan operators in the at Moody Air Force Base, GA, prior to deploying into theater for operations. There is also a training base at Sheppard AFB, TX (ENJJPT), which trains European NATO members alongside U.S. pilots in a joint training construct. For more detailed information on the Afghanistan Light Attack training in the U.S., see Eric Summers, "A-29 Super Tucano arrives at Moody AFB," *U.S. Air Force,* 2014, 1-3. http://www.af.mil/News/Article-Display/Article/502897/a-29-super-tucano-arrives-at-moody-afb/. See also Sheppard AFB Website "Euro-NATO Joint Jet Pilot Training Program (ENJJPT), 2012, 1-3. http://www.sheppard.af.mil/Library/Fact-Sheets/Display/Article/367537/euro-nato-joint-jet-pilot-training-program-enjjpt/

Conclusion
Seeking the Continuing Advantage

Niger's government and economy presents a long-term challenge for the entirety of the Sahel if not properly addressed through partnership building between the U.S and other regional nations. For Niger and the Sahel as a whole, these challenges when combined with the country's growing youth population and lack of security have allowed VEOs to establish safe-haven and increase in strength. This poses a threat to U.S. national interests and security. Niger's booming youth cohort of over 15 million creates an opportunity cost for VEOs to capitalize on for decades to come if a careful whole of government approach is not pursued by the U.S. and IC. Multiple countries in the Sahel have joined together to stifle this trans-national threat, but the mission lacks the organic air support needed, as evident with the October 4th attacks on U.S. and partnered troops.

Although the U.S. LAA is still in testing phase, this paper presents an increased security strategy enabling both a U.S. and a regional task force to create a long-term solution that prevents U.S. involvement in other nation's conflicts without an end in sight. This thesis recommends that the U.S. Air Force scales small with the LAA concept to not further exacerbate its existing aircrew shortage. Building a new capability in the service's arsenal without the experienced manpower capacity requires careful consideration as to how the Air Force will create these squadrons, which may involve changing the way they are constructed and deployed in the future. Starting small, the Air Force can build an LAA fleet that drives a new culture for the combat aircrew that brings back the heritage and lineage of how operations were conducted in the past, as demonstrated with the historic Eagle squadrons during WWII. This major pivot in strategy may be what the service needs to solve the aircrew shortage crisis.

Once the initial U.S. LAA construct is decided and implemented, it is recommended that the service train Sahel operators simultaneously while it sends U.S. operators into the Sahel to provide effective support from the air over Niger and its contiguous borders. It will take approximately two years from the initial startup of LAA in the U.S. to having fully trained Sahel operators ready to integrate with U.S. air advisors in which LAA could be flown with both U.S. and partnered nations. This strategic concept enables Niger to have a viable air component trained and equipped by the U.S. and enables AFRICOM to work by, with, and through partnered Sahel nations. LAA creates a pathway allowing African nations to fight African conflicts, further strengthening U.S. and partnered nations in the Sahel while simultaneously disrupting, denying, and degrading the transnational VEO threat.

This thesis has also identified areas for future research in order to provide effective governance and security for Niger and the surrounding Sahel as a whole. First, from a governance standpoint, Issoufou's Western democratic leadership style is a first since Niger's independence. This requires continued support from the U.S. and I.C. due to the fact that 98% of the country's populace is Muslim with three of the world's deadliest terrorist organizations already nested in its borders. Nordas and Davenport's recent literature on youth bulge correlation to state repression with regime style dictatorship highlights the continued importance of democracy and western influence that Issoufou's leadership provides.

This brings forward the political constraints at play between the U.S. and partnered nations in the Sahel involving use of LAA as a method of combatting VEOs, which explains the U.S.' military role on the continent of advise and assist. Previous U.S. attempts to negotiate LAA operations with Nigeria has made LAA procurement successful, albeit somewhat difficult. As a result, the US has made efforts to provide

training and doctrine development prior to agreement on sale of LAA, greatly lengthening the process to bring this capability into theater.[1] Future research on the successfulness of Nigeria's purchase of LAA and integration with the U.S. from a political standpoint will provide better framework for analysis regarding future integration of LAA in Niger.

This thesis did not fully take into account these political factors at play between the U.S. and partnered nations in the Sahel, presenting a possible weakness towards this recommended strategy. The U.S. has a long history of upholding democratic values and international order that prevents the violation of human rights, abuse, and corruption. Although Niger has turned a new leaf through a democratic election with Issoufou, there are still significant challenges that lay ahead in eliminating corruption and human suffrage throughout the country. These political factors can make the recommended proposal in this thesis difficult, however, with the U.S.' continued pursuit in combatting VEOs combined with Niger's emerging youth bulge may make this strategy much more palatable.

Second, with a four-year economic decline identified by the World Heritage organization, it is prudent to monitor the country's already fragile GDP per capita and external debt ratio, as this could have devastating effects on the country's ability to provide stability in the Sahel. This severe economic challenge highlights that VEOs may not necessarily seek out Niger's youth, as the youth may seek out the VEOs instead in order to survive. LAA provides only a small piece of the security puzzle to combat the risk of youth recruitment, while a large focus needs to be on building Niger's overall security and infrastructure so that it can absorb the rapid population growth on its horizon.

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[1] Valerie Insinna, "US approves A-29 Super Tucano sale to Nigeria," *Defense News*, August 2017. 1-3. https://www.defensenews.com/air/2017/08/03/us-approves-a-29-super-tucano-sale-to-nigeria/

Additionally, educational opportunity for Niger's women and children must be pursued in order as a long-term strategy to thwart VEO recruiting efforts. The U.S. can look to public/private opportunities from other areas of the world such as Afghanistan to help increase educational opportunities for women. For example, Matt Griffin, a former military officer who served four tours in Afghanistan has founded a U.S. manufacturing company that sells "combat flip flops" in the public sector. For every pair sold, Matt's Griffin funds a day of education for a woman in Afghanistan, hoping that he can provide peace in the region through trade, not war. As of spring of 2018, Matt's company has funded over 470 years of education which can be distributed throughout the women of Afghanistan. This is one of many efforts being pursued around the world that Niger could benefit from for a long-term strategy.[2]

The U.S. can better accomplish this effort by pursuing a whole of government approach at identifying areas throughout the Sahel region in order to create proper conditions in which membership in regional security agreements like the FC-G5S and MNJTF can be made instead of continuing bi-lateral agreements. This pursuit needs to be aimed towards a strategy that bolsters economic support from European allies instead of primarily the U.S. to fund and source the region's efforts in providing security. This strategy offers a continuing advantage, ensuring warfighters in the Sahel are properly supported to achieve victory against VEO threats, while the U.S. works by, with, and through African partners.[3]

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[2] Matthew Griffin, "Combat Flip-Flops: The Mission," *Combat Flip-Flops*, 1-2. https://www.combatflipflops.com/pages/our-story

[3] Everett Dolman, *Pure Strategy: Power and Principle in the Space and Information Age*. 2nd ed. (London, UK: Routledge 2011), 18.

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