



NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

**VOLUNTEER FLYING ORGANIZATIONS:
LAW ENFORCEMENT'S UNTAPPED RESOURCE**

by

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December 2016

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**VOLUNTEER FLYING ORGANIZATIONS: LAW ENFORCEMENT'S
UNTAPPED RESOURCE**

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ABSTRACT

Given the fiscal constraints of today's law enforcement environment, many local police and sheriff agencies are unable to fully implement an aviation division due to the inherent costs to operate aircraft and pay professional law enforcement pilots. To cope with the extreme costs, some smaller police forces around the country have relied on the help of volunteer civilian pilots to augment law enforcement based aviation operations. This thesis uses recommendations of the Public Safety Aviation Accreditation Commission (PSAAC) to provide a foundational understanding on the critical aspects of running a law enforcement aviation division. By using PSAAC as the foundation, this thesis compares the aviation divisions of the following agencies: California Highway Patrol (CHP), Monterey County Aero Squadron (MCAS), and Lane County Sheriff's Office (LCSO). Comparing the all-volunteer divisions of MCAS and LCSO to the professional force of CHP yielded a list of best practices for the law enforcement aviation community.

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LIST OF ACRONYMS AND ABBREVIATIONS

ABI	activity based intelligence
BP	British Petroleum
CAA	Civil Aeronautics Authority
CAP	Civil Air Patrol
CFI	certified flight instructor
CHP	California Highway Patrol
DHS	Department of Homeland Security
DOJ	Department of Justice
FAA	Federal Aviation Administration
FBI	Federal Bureau of Investigations
GA	general aviation
GAO	Government Accounting Office
IC	Intelligence Community
IDSO	intelligence driven special operations
LCSO	Lane County Sheriff's Office
LE	law enforcement
Lt	lieutenant
MCAS	Monterey County Aero Squadron
NAI	named area of interest
NOAA	National Oceanic and Atmospheric Administration
PSAAC	Public Safety Aviation Accreditation Commission
SAR	search and rescue
SMS	safety management system
SOP	standard operating procedure
USAF	United States Air Force
VIPS	Volunteers in Police Service
WWII	World War II

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I. VOLUNTEER FLYING ORGANIZATIONS: LAW ENFORCEMENT'S UNTAPPED RESOURCE

A. MAJOR RESEARCH QUESTION

Given the fiscal constraints of today's law enforcement (LE) environment, many local police and sheriff's agencies are unable to fully utilize their aviation assets due the extreme cost of training a fully qualified pilot. One possible solution to this problem could be the use of a civilian volunteer pilot program for homeland security, similar to the Civil Air Patrol (CAP) programs that provide vital search and rescue capabilities throughout the country. This thesis examines the question: Could incorporating volunteer flying programs assist fiscally constrained law enforcement agencies by providing qualified pilots to support air operations in local jurisdictions? Additional thesis questions address the following aspects of incorporating a volunteer flying program: What are the benefits of using general aviation assets to support intelligence-led policing? What types of communities require support from a volunteer flying program? What are the critical elements to build a volunteer flying program? Last, could incorporating a volunteer flying organization enhance the intelligence apparatus for the Department of Homeland Security (DHS)?

B. SIGNIFICANCE OF THE RESEARCH QUESTION

To stay ahead of criminal activity, law enforcement agencies must learn to take advantage of the domain in the skies above us all. According to the U.S. National Oceanic and Atmospheric Administration (NOAA), general aviation (GA) consists of nearly 27,000 flights per day, or 31 percent of the total number of within the United States.¹ General aviation is an untapped resource for both LE agencies and DHS. Therefore, using volunteer organizations to either fly government assets or augment the pilot force may help fill the gap without greatly affecting budgets. This thesis argues that

¹ National Oceanic and Atmospheric Administration, "Air Traffic," accessed March 13, 2016, <http://sos.noaa.gov/Datasets/dataset.php?id=44>.

incorporating GA assets into the LE surveillance game plan can help both LE agencies and DHS obtain a strategic advantage in fighting crime and terrorism.

Currently, there are federal agencies employing tactical aviation units to help fight criminal activity. According to the Federal Bureau of Investigation (FBI) website, aviation units support a variety of missions that are directly involved with national security.² Aligned under the Department of Justice (DOJ), the FBI is tasked with providing “counterterrorism investigations and intelligence operations within the United States.”³ The DOJ Inspector General conducted an audit of the FBI’s aviation operations program in 2012 and found that aviation support dramatically increases a special agent’s ability to collect both intelligence and evidence of criminal activity. Utilizing tactical aviation units inside the FBI helps establish patterns of life on terror groups and support traditional LE requirements for the agency.⁴ Aerial surveillance, through the use of tactical aviation units, serves as a LE force multiplier for the FBI.

Additional findings in the FBI’s 2012 audit identify an overall lack of aviation resources, which revealed a gap in the requirements of their field teams. Specifically, more than half of the FBI’s air requests of 2009–2010 went unfilled due to a combination of either pilot or aircraft shortages.⁵ According to the audit, “FBI aviation assets are a limited resource due to funding restrictions and the special skills required to manage, fly, and maintain an operationally ready fleet.”⁶ This thesis illustrates similar issues within LE agencies across the United States.

As far as policy is concerned, to address this issue, DHS could expand current directives to cover the gap of internal aviation shortages. Under the security realignment established by DHS, local LE agencies now work with federal agencies to coordinate

² Federal Bureau of Investigations, “Critical Incident Response Group (CIRG),” accessed March 16, 2016, <https://www.fbi.gov/about-us/cirg>.

³ U.S. Department of Homeland Security [DHS], *Air Domain Surveillance and Intelligence Integration Plan* (Washington, DC: U.S. Department of Homeland Security, 2007), https://www.dhs.gov/xlibrary/assets/hspd16_domsurvintelplan.pdf, 12.

⁴ Federal Bureau of Investigations, *Aviation Operations: Audit Report 12–21* (Washington, DC: Federal Bureau of Investigations, 2012), <https://oig.justice.gov/reports/2012/a1221.pdf>, 7–8.

⁵ *Ibid.*, xiv.

⁶ *Ibid.*, 7.

efforts to combine intelligence information inside fusion centers. Fusion centers must have the ability “to receive, analyze, gather, and share threat related information.”⁷ Some of the data utilized in fusion centers originates from aerial surveillance programs established by the DHS’s air domain surveillance and intelligence integration plan. The air support plan establishes a framework that enables local police forces to unite with U.S. federal agencies to determine strategic intelligence collection priorities. By design, DHS’s air domain doctrine seeks either to find the pieces to the puzzle to prevent an attack or to minimize the collateral effects of a terrorist event.⁸ Using the federal direction of DHS, local LE agencies have a mandate to equip and train their forces to utilize the intelligence resources that the air domain can provide.

C. LITERATURE REVIEW

This literature review seeks to provide a framework for understanding both the necessity and the applicability of adopting volunteer flying programs to support LE activities. To date, there has been minimal scholarly writing on the idea of using GA assets to assist in LE activities. Furthermore, as noted in a 2015 article *Police Chief Magazine*, “very little information has been collected on the people who decide to volunteer as reserve or auxiliary police officers.”⁹ Therefore, this literature review addresses the following three topics in an attempt to examine the current state of affairs in police force volunteerism, aviation support to intelligence-led policing, and the specific uses of CAP to support both post 9/11 LE missions and the 2002 Winter Olympic Games.

1. Current State of Volunteerism in Law Enforcement

First, this literature review analyzes the historical uses and current state of volunteerism in American LE. Historically, volunteer support to both police forces and

⁷ U.S. Department of Homeland Security Office of Inspector General, *DHS’ Efforts to Coordinate and Enhance its Support and Information Sharing with Fusion Centers* (Washington, DC: U.S. Department of Homeland Security Office of Inspector General, 2011), 3.

⁸ DHS, *Air Domain Surveillance*, 6–9.

⁹ Ross Wolf, James F. Albrecht, and Adam Dobrin, “Reserve Policing in the United States: Citizens Volunteering for Public Service,” *The Police Chief* 82 (October 2015): 38–47.

sheriff's departments has a long rooted tradition in American LE culture. According to professors Ross Wolf, James Albrecht, and Adam Dobrin, American sheriffs have traditionally banded together groups of non-paid citizens to assist LE activities since the 17th century. Over time, these impromptu volunteer forces became known as the sheriff's posse, and they have augmented many LE offices with personnel shortages during times of extreme need.¹⁰ Even today, the heritage of the American police-force volunteer continues with renewed vigor. Aligned under the DOJ, Volunteers in Police Service (VIPS) provides essential resources to tribal, local, and state jurisdictions in an effort to establish policies that help build a robust volunteer force. Much like the sheriff's posse of lore, VIPS volunteers provide a wealth of resources that ultimately enable both public service and crime prevention.¹¹ Unfortunately, without the support of unpaid volunteers, many police force missions would simply go unfulfilled in the scarcity of the current economic environment.

In 2011, VIPS conducted a nationwide study to analyze the effects of decreased budgets in combination with the use of LE volunteers. VIPS found that fiscal constraints due to the reapportionment of tax dollars have forced many LE agencies to drastically cut their budgets, which often results in having fewer paid officers available for patrol.¹² A primary finding of VIPS is the conclusion that many police forces around the nation succeed during times of fiscal drought through the employment of community volunteers.¹³ Additional scholarly evidence from Wolf, Albrecht, and Dobrin suggests the following LE response toward adapting to lean fiscal times: "With diminishing resources, shrinking budgets and the demand for qualified personnel continuing to rise, many police agencies rely on volunteers to help offset their costs."¹⁴ Essentially, in a

¹⁰ Ibid.

¹¹ Volunteers in Police Service [VIPS], *Volunteers in Police Service Add Value While Budgets Decrease* (Washington, DC: Bureau of Justice Assistance, 2011), http://www.theiacp.org/Portals/0/documents/pdfs/VIPS_police_service_add_value_while_budgets_decrease.pdf, 3–5.

¹² Ibid., ii-1.

¹³ Ibid.

¹⁴ Wolf, Albrecht, and Dobrin, "Reserve Policing," 38.

world where many government organizations are tasked to do more with less, police force volunteers have actually helped LE agencies at least uphold the status quo.

Utilizing police force volunteers significantly helps fiscally constrained LE agencies allocate resources to ensure public safety. According to the 2011 VIPS report, “volunteer patrols allow law enforcement agencies to greatly expand their presence in the community and provide services to residents that they may not time to do otherwise.”¹⁵ In an effort to better understand the use of LE volunteers, Ross Wolf, Stephen Holmes, and Carol Jones conducted a study for the journal *Police Practice and Research*. Their findings indicate that many police forces use volunteers to augment traditional LE duties such as routine patrols, traffic enforcement, and event policing.¹⁶ Additionally, Wolf and his colleagues also found that a majority of LE volunteers provide a service that centers on their area of expertise or personal interests. The limited research on police force volunteers indicates that motivated citizens can help cash-strapped LE agencies meet their public safety requirements. Additionally, the evidence also shows that LE agencies will continue to incorporate volunteer agencies to assist with policing.

2. Reliance on Intelligence-Led Policing

The second topic in this literature review addresses the emerging field of intelligence-led policing. Today, LE agencies focus more on crime prevention than in the decades leading to the 9/11 attacks. According to an article by John Coyne and Peter Bell in the *Journal of Policing*, modern LE activities transformed to help reduce the impact of a major event similar to the 9/11 attacks. Now, police forces emphasize the need to acquire strategic intelligence on criminal activities to prevent the next surprise attack.¹⁷ The study by Coyne and Bell reflects a change in LE that occurred because of the creation of DHS. The DHS’s mission statement charges the organization with preventing terrorist attacks and reducing the collateral damage that may occur with a successful

¹⁵ VIPS, *Volunteers in Police Service*, 21.

¹⁶ Ross Wolf, Stephen T. Holmes, and Carol Jones, “Utilization and Satisfaction of Volunteer Law Enforcement Officers in the Office of the American Sheriff: An Exploratory Nationwide Study,” *Police Practice and Research* (April 2015): 4–8, doi:10.1080/15614263.2015.1031750.

¹⁷ John Coyne and Peter Bell, “Strategic Intelligence in Law Enforcement: A Review,” *Journal of Policing, Intelligence and Counter Terrorism* 6 no.1 (2011): 23.

attack.¹⁸ Effectively, LE agencies and DHS share an increased responsibility to collect intelligence information to prevent criminal activities and large-scale attacks.

How should LE agencies optimize aviation support to intelligence-led policing today? One approach could be to simply look at how military aviation supplements battlefield intelligence requirements to find the answer. According to Coyne and Bell, LE agencies directly benefit from deliberately incorporating intelligence analysts into the decision-making process. For Coyne and Bell, LE agencies need to initiate an intelligence driven process that collects and analyzes information on criminal networks. To better meet the security demands of a post 9/11 world, police forces should examine how intelligence analysts assist military operations.¹⁹ History demonstrates that successful military operations require the use of intelligence analysis to predict probable enemy courses of action. Therefore, Coyne and Bell definitively suggest that LE should adopt an intelligence driven mentality toward policing.

A 2014 article by Jillian Wisniewski in *Small Wars Journal* reveals that aerial reconnaissance can help deliver an important piece of the intelligence puzzle by providing passive surveillance of named areas of interest (NAI). Wisniewski advocates for intelligence analysts to build NAI reconnaissance requests to help provide a better understanding of the battlespace. In addition, Wisniewski recommends that intelligence officials provide aviation units with surveillance prioritization requests. Essentially, building a rolodex of intelligence requirements gives pilots the flexibility to scan areas of overflight, and it may help feed the indelible requirement to establish patterns of life in objective areas. According to Wisniewski, “it is in providing this long-term reconnaissance capability that makes the aviation unit integral.”²⁰ It may be taboo to equate local LE jurisdictions to the battlefield conditions that inspired Wisniewski’s

¹⁸ Mark Randol, *The Department of Homeland Security Intelligence Enterprise: Operational Overview and Oversight Challenges for Congress* (Washington, DC: Congressional Research Service, 2010), 1.

¹⁹ Coyne and Bell, “Strategic Intelligence,” 30–31.

²⁰ Jillian Wisniewski, “The Un-tapped Potential of Aviation Intelligence,” *Small Wars Journal*, March 3, 2014, <http://smallwarsjournal.com/jrnl/art/the-un-tapped-potential-of-aviation-intelligence>, 2.

article; however, she does make relevant points on how strategically coordinated intelligence requests can feed long-term intelligence projects.

Police forces and DHS often integrate their intelligence requirements with aerial reconnaissance capabilities to enable intelligence-led policing. DHS's air domain and surveillance directive provides a mandate to integrate the skill sets of both pilots and intelligence professionals. Aligning the two areas of expertise, according to DHS, has helped LE agencies address the operational threats that may be found inside of local jurisdictions.²¹ Therefore, investing in intelligence-driven aviation programs may help DHS achieve its previously stated objectives. Wisniewski details the intrinsic value of air power: "Because of the frequent employment of aviation assets, the aviator is the most consistent sensor on the modern battlefield and is thus the most economical sensor for steady-state collection of visual indicators."²² Likewise, the research of Coyne and Bell also highlights the benefits to implementing strategic intelligence collection to fight criminal activities.²³ Combining the arguments of Coyne, Bell, and Wisniewski demonstrates the viability of constructing intelligence-driven flying organizations designed to provide critical information to help fight crime.

3. Civil Air Patrol's Use in Law Enforcement

The final topic of this literature review examines the use of CAP's capability to directly support LE activities. Although it has a very limited resource pool of volunteers and planes, CAP provides a unique asset to homeland security and defense. Air Force Secretary Deborah James calls CAP "a strategic partner . . . saving the Air Force almost 40 times the cost of using military assets for each hour served."²⁴ Secretary James's comment about the partnership refers to the critical missions the volunteer force carries out for the nation. Today, CAP missions provide real-time reconnaissance efforts to

²¹ DHS, *Air Domain Surveillance*, 6–7.

²² Wisniewski, "Un-tapped Potential," 3.

²³ Coyne and Bell, "Strategic Intelligence," 31.

²⁴ Whitney Stanfield, "Civil Air Patrol Joins Total Force 'Airmen,'" Secretary of the Air Force, Public Affairs Command, August 28, 2015, <http://www.af.mil/DesktopModules/ArticleCS/Pint.aspx?PortalId=1&ModuleId=850&Article=615251>, 1.

support both LE and DHS operations.²⁵ For example, “intelligence and warning operations” along with “domestic counterterrorism” are two of the six critical mission sets that CAP fulfills for DHS. To fulfill its national security mission, CAP provides intelligence officials with imagery from reconnaissance missions, and intelligence analysts use the information provided by CAP missions to establish patterns of life and other trends to aid in detecting criminal activity.²⁶ In all, CAP delivers a unique but limited resource to the intelligence apparatus for DHS as demonstrated through some of the organization’s success stories.

Historically, CAP has augmented the Air Force by providing volunteer platforms for search and rescue operations, disaster relief, and mission coordination. Moreover, it utilized all of those skills sets in response to the 9/11 attacks. Almost immediately after the World Trade Center towers fell, CAP stood up operations and readied its GA aircraft and volunteer pilots to meet the nation’s calling. Within six hours of the attacks, CAP aircraft flew the first set of search and rescue missions. In addition, CAP missions conducted the first over flight of ground zero on September 21, 2001, which provided high-quality intelligence to the ground based rescue and recovery operations.²⁷

In all, the level of support that CAP has provided the nation demonstrates a unique capability that GA can provide to LE and DHS. Although seemingly robust, there are simply too few volunteers and too few assets to adequately fill the intelligence gaps by using CAP assets alone. The institution, however, provides a foundational understanding for how to integrate a volunteer GA force into the LE and DHS intelligence communities. Interestingly, there are some examples of the use of volunteer pilots to support LE mission, and the research surrounding this thesis topic is limited. As such, the previous three sections help to establish a framework for understanding the current state of affairs within the following three realms: the current status of LE

²⁵ Civil Air Patrol [CAP], *Support for the President’s National Security Strategy for Homeland Security* (Maxwell AFB, AL: Headquarters Civil Air Patrol, 2002), <https://www.hsdl.org/?view&did=437367>, 5.

²⁶ Ibid., 7–8.

²⁷ Ibid., 8.

volunteers, the viability of aviation to support intelligence-led policing, and the historical uses of CAP to support high-impact LE missions.

D. POTENTIAL EXPLANATIONS AND HYPOTHESES

The ultimate goal of DHS should be to gain a strategic advantage to prevent future enemies from attacking the United States. To meet the intelligence demands of LE agencies, this thesis argues that DHS should consider incorporating GA assets to supplement both local and federal agencies. Historically, organizations such as the CAP have helped cover the resource gap of limited aviation assets and qualified pilots. CAP volunteers have provided critical surveillance and intelligence information to ground teams charged with protecting U.S. interests, and this thesis proposes the CAP can serve as a model for the use of volunteer flying programs to support local law enforcement.

In addition, federal mandates to DHS and LE agencies emphasize the use of intelligence to support police operations to prevent or mitigate future attacks. The FBI responded to DHS's challenge with the use of tactical aviation units. However, the FBI example reveals a gaping hole in the amount of aviation support required versus what is actually provided. To fill that requirement gap, more attention should be given to incorporating volunteer programs with use of GA assets and pilots. As stated in Section B of this chapter, there are more than 27,000 GA flights per day in the United States. Therefore, this research project considers ways augment LE aviation with the use of volunteer flying organizations that can provide additional resources to police forces across the nation.

I believe that combining the resources of local police forces and DHS can provide actionable intelligence to LE officers and may help them prevent an attack or an event. Under the current rules, DHS can set up an effective aerial surveillance program by using an existing umbrella program known as intelligence driven special operations (IDSOs). According to a March 2010 Congressional Research Service report, IDSOs "are enforcement actions that are based upon specific intelligence or current trends."²⁸ To predict criminal activities requires LE agencies equip their officers with the flexibility

²⁸ Randol, "DHS Intelligence Enterprise," 27–28.

aerial surveillance provides. To do so, LE divisions should look no further than how DHS describes the unique capability of surveillance in the air domain. The DHS's air domain directive claims that LE officers can have shared situational awareness through reconnaissance, aerial derived imagery, and real-time assessment of the threat condition.²⁹ The aerial reconnaissance and surveillance program closely resembles what military officers refer to as intelligence preparation of the battlefield. Often, the key to victory rests on an organization's ability to scout and predict how its opponents will react. Although costly, leveraging the aerial domain can help provide a crucial intelligence resource to LE and the DHS.

Due to the current fiscal constraints of the U.S. government, the FBI and other LE agencies should begin to consider cost-effective initiatives to help fill the resource gap. Obtaining intelligence support through creative use of the air domain requires LE agencies to invest in costly flying programs. Unfortunately, for the intelligence community, budgets have been continually shrinking since 2010. Director of National Intelligence James Clapper says that the U.S. national budget on intelligence has decreased from \$80 billion in 2010 to \$72 billion in 2015.³⁰ Although the bulk of Director Clapper's budget goes to large federal programs, the fiscal restraints are felt across the entire realm of the intelligence community. Perhaps, in the face of limited budgets, DHS and LE agencies could look to GA to provide a cost-effective program to fulfill police-led intelligence requirements. As noted earlier, there are almost 30,000 GA flights occurring every day, and both LE and DHS should tap into this potential resource.

A possible solution to fill the requirements gap could be through the use of volunteer pilots and GA assets. As noted in the journal article by Wolf, Holmes, and Jones, LE volunteers "indicated that one of the major reasons they served was so that they could utilize their knowledge and skills from their regular careers and hobbies to enhance the agency."³¹ In addition, preliminary research indicates that there are at least

²⁹ DHS, *Air Domain Surveillance and Intelligence*, 5–6.

³⁰ Loch Johnson, "A Conversation with James R. Clapper Jr., The Director of National Intelligence in the United States," *Intelligence and National Security* 30, no 1 (2015): 20, doi:10.1080/02684521.2014.972613.

³¹ Wolf, Holmes, and Jones, "Utilization and Satisfaction," 12.

two types of LE agencies that incorporate flying operations to support policing. First, there are organizations from large metropolises that have expansive budgets and access to resources. For example, Orange County, California's sheriff's office has a LE flying program that relies solely on paid personnel.³² The second type of LE organization usually serves a smaller market with a limited access to fund flying organizations. For instance, Monterey County California Sheriff's Department currently uses an all-volunteer force of pilots to fly its Cessna-206.³³

E. RESEARCH DESIGN

This thesis seeks to develop a model of how to incorporate a volunteer flying program into LE agencies that lack the funding to establish their own internally funded aviation units. To construct the model, this thesis looks at three different types of LE agencies that range from those that have a fully funded aviation program, to those that use of an all-volunteer flying force to augment police actions. Through the use of case studies, this project first examines how the California Highway Patrol (CHP) runs its fully funded tactical aviation units. The second and third case studies examine how the Monterey County Aero Squadron (MCAS) of Monterey, California, and Lane County Sheriff's Office (LCSO), of Eugene, Oregon, uses all-volunteer flying divisions to bridge the gap in resources and meet their aviation requirements.

Comparative case studies serve as the best method to conduct a qualitative examination of the use of public resources to fund or support LE aviation for resource rich and resource limited agencies. This thesis project seeks to identify the essential components that help ensure success for each of the examined agencies. The end result of the study is a framework for LE agencies interested in employing or changing their aviation programs. Ultimately, the data collected in this research design will assist LE

³² Darryl Kimball, "California Orange County Sheriff's Department Air Support Bureau," Police Helicopter Pilot, December 23, 2011, <http://www.policehelicopterpilot.com/police-sheriff-aviation-units/california-orange-county-sheriffs-department-air-support-bur.html>.

³³ Monterey County Sheriff's Aero Squadron [MCAS], *Operations Manual*, rev. 1.3 (Monterey, CA: Monterey County Sheriff's Aero Squadron, 2016), 8–9.

agencies to assess their current budgetary constraints and provide possible cost-saving solutions through the use of a volunteer flying squadron.

F. THESIS OVERVIEW

This thesis proceeds as follows: Chapter II provides background on the CAP and how an all-volunteer flying organization augments search and rescue (SAR) and LE activities. Chapter III unveils the recommendations provided by Public Safety Aviation Accreditation Commission (PSAAC) as to how to build and operate LE aviation divisions. As a non-governmental organization, PSAAC provides industry guidelines to help vector LE aviation operations to ensure safety and mission effectiveness. Chapters IV, V, and VI use PSAAC's recommendations to analyze the flying operations of CHP, MCAS, and LCSO. Chapter VII presents the best practices found within this research project. The end result will help volunteer organizations build and operate safe flying programs to meet the rigors found within LE aviation.

II. CIVIL AIR PATROL: HOMELAND SECURITY'S VOLUNTEER AVIATORS

According to intelligence expert Henry Crumpton, “America’s homeland will grow increasingly vulnerable to foreign threats unless the U.S. government develops robust intelligence systems to complement homeland defense.”³⁴ Fighting terrorism and organized crime requires a deliberate effort to collect actionable intelligence on illegal crime rings. To stay ahead of criminal activity, LE should apply an appropriate amount of resources to successfully leverage the inherent advantages of the aerial domain. Providing critical intelligence to operational units can be a costly endeavor. As such, the U.S. government must look for fiscally responsible ways that provide a strategic advantage to LE agencies in the fight against terrorists and criminals. One possible cost-effective solution is CAP, an all-volunteer organization that has flown homeland security missions for the United States since 1941. Therefore, this chapter argues for the expansion of volunteer programs such as CAP to meet the growing demands of homeland security in an increasingly dangerous world.

To prove that CAP has effectively used an all-volunteer force to fly homeland security missions, this chapter covers five major areas. First, it examines the historical roots of CAP and shows how the organization became a national security instrument during World War II (WWII). The second section addresses the current status of membership and intelligence capabilities within CAP. Then, this chapter demonstrates how the intelligence capabilities of CAP can fit into the DHS and LE intelligence communities. Fourth, it provides recent examples of how CAP volunteers have supported homeland security efforts during modern crises. Finally, this chapter advocates for expanded use of volunteer programs such as CAP to help with intelligence-led policing and training the next generation of service minded aviators.

³⁴ Henry A. Crumpton, “Intelligence and Homeland Defense,” in *Transforming U.S. Intelligence* ed. Jenifer Sims and Burton Geber (Washington, DC: Georgetown University Press, 2005), 198.

A. CIVIL AIR PATROL'S HISTORY

Historically, CAP has augmented the U.S. Air Force (USAF) by providing aviation volunteers for search and rescue operations, disaster relief, and basic missions for homeland security. Ultimately, studying CAP enables us to understand the value that general aviation assets and volunteerism can provide to both LE agencies and DHS. Civil Air Patrol officially started operations on December 1, 1941 when the Office of Civilian Defense authorized the establishment of the civilian defense force. Since the creation of the organization, CAP has dutifully served the nation for more than 74 years. According to CAP's original operating instruction, the organization was designed to "use general aviation pilots and aircraft to support the nation's civil defense program."³⁵ The information in this section demonstrates how CAP grew into a critical volunteer organization, knocking down gender barriers while also providing an extra layer of homeland security during the WWII.

On the verge of WWII and strapped for dedicated resources to protect the national shoreline, the U.S. government implemented a program to use a civilian aerial defense force to bolster homeland defenses. However, building the civilian organization took the visionary leadership of the U.S. Air Force's most notable leaders, such as General Henry "Hap" Arnold, who served as the only person to ever earn the distinguished title of "General of the Air Force." According to Thomas Reilly, "the farsighted General Arnold undoubtedly deserves much of the credit for the Civil Air Patrol."³⁶ Due to General Arnold's steadfast dedication to the creation of a civilian defense force, the new organization began flight merely a week prior to the Japanese attack on Pearl Harbor. In addition, Reilly's research indicates that the new civilian defense force originally only planned to activate its volunteers for 90-day periods. However, the volunteer organization developed into a full-time national defense asset after successfully completing several coastal interdiction missions during the early stages of U.S. involvement in the war. By 1943, CAP had expanded into all 50 states thus providing an opportunity for people

³⁵ CAP, *Support for the President's*.

³⁶ Thomas Reilly, "Florida's Flying Minute Men: The Civil Air Patrol, 1941–1943," *The Florida Historical Quarterly* 76, no. 4 (1998): 418.

across the nation to volunteer to protect the homeland.³⁷ From the beginning, CAP volunteers provided a crucial and cost-effective solution to policymakers charged with protecting America's borders.

Historically, CAP has provided the nation with qualified volunteers who stood ready to protect the nation from its most formidable adversaries. Civil Air Patrol's formative years saw the organization quickly grow into a national defense-minded operation. Originally, operational and strategic control of CAP assets fell under the direction of the Army Air Forces' nine regional commands. More than 65,000 volunteers responded to the Axis threat of WWII and signed up to help CAP during its first year of operation.³⁸ The initial qualifications for CAP volunteers included "any citizen pilot of good character, certified by the CAA [Civil Aeronautics Authority] in the grade of Private pilot or higher grade, and any citizen of good character."³⁹ In addition, several non-flying volunteers took on many of the following duties to help enable CAP functions: clerical work, aircraft maintenance, refueling operations, first aid training, and anything that helped the CAP generate aircraft sorties.⁴⁰ Ultimately, CAP's first generation of volunteers provided a critical foundation that helped establish the famous total war effort of WWII.

During WWII, Rosie the Riveter became the war icon of the era. Howard Miller's famous poster portrays Rosie clinching a fist and flexing her right arm under the words, "We Can Do It!" According to James Kimble and Lester Olson, "during World War II, women in the United States turned manpower into woman power as housewives across the nation took manufacturing jobs building bombers, ships tanks, and munitions they would fire."⁴¹ Reilly points out that CAP also helped tackle the gender barriers that pervaded American culture leading up to the 1940s. Initially, CAP prohibited women

³⁷ Ibid., 421–424.

³⁸ Ibid., 424–425.

³⁹ Ibid., 424.

⁴⁰ Ibid., 424–425.

⁴¹ Lester Olson and James Kimble, "Visual Rhetoric Representing Rosie the Riveter: Myth and Misconception in J. Howard Miller's "We Can Do It!" Poster," *Rhetoric and Public Affairs* 9, no. 4 (2007): 533–534.

volunteers from flying operations and only allowed them to help with office functions. However, that practice changed as the need for qualified pilots increased between the years 1941 to 1943. By the end of 1943, CAP recruitment included more than 7,500 female volunteers, of which, the majority of the women were assigned to flying duties. At the end of WWII, U.S. Air Force Major General John F. Curry praised female pilots as total-force enablers who had participated in critical CAP missions.⁴² Conclusively, CAP empowered a variety of volunteers to participate in the total-war effort toward defending the nation during WWII. Without the help of a large, dedicated volunteer force, CAP would have stumbled out of the gate in completing its initial missions.

Under the direction of the Army Air Forces, CAP flew its first critical missions along America's eastern shoreline during WWII and provided critical defenses against German U-boats. Reilly writes, "The Germans had prepared for America's entry into the war long before December 1941. Their submarines had secretly patrolled thousands of miles . . . They were prepared to wreak havoc on domestic and foreign civil shipping."⁴³ To combat the Nazi's attempt to wage war on American territory, many CAP missions centered on locating German U-boats operating off of the eastern shoreline. Often, CAP pilots would fly just above the water as far as 60 miles off of the coast to locate German submarines. After months of harassment by CAP pilots, the German Navy U-boat commanders called the CAP airplanes little "yellow bugs."⁴⁴ Eventually, CAP progressed from solely conducting spotting missions and actually equipped its planes with explosive ordinance to attack enemy ships and submarines.⁴⁵ By the end of the war, CAP volunteers flew more than 24 million nautical miles, rescued countless downed airmen off of the nation's coast, and were credited with sinking two German U-boats.⁴⁶ Civil Air Patrol's volunteers successfully protected the nation by fearlessly answering the call to serve during WWII.

⁴² Reilly, "Florida's Flying Minute Men," 425.

⁴³ Ibid., 422.

⁴⁴ Ibid., 428–429.

⁴⁵ Ibid., 428.

⁴⁶ Ibid., 438.

Furthermore, Civil Air Patrol proved to be a critical component of the national security structure for the United States by the end of WWII. Therefore, after victories in both Europe and Japan in 1945, CAP continued to function as a volunteer organization under the War Department. Congress eventually declared CAP a non-profit organization in 1948, and this gave rise to the current structure of the organization. Just as in WWII, CAP volunteers continue to serve in every state of the nation. In addition, Congress's charter allows CAP to operate as a group of community volunteers in an auxiliary role to the U.S. Air Force.⁴⁷ Collectively, CAP sprouted from the minds of visionaries, such as "Hap" Arnold, and it has undoubtedly proved its worth by providing a cost-effective solution to augment homeland defense during the total-war effort of WWII. The following section demonstrates how CAP continues to fulfill a critical role in providing national security capabilities to DHS, LE, and the U.S. Air Force.

B. CURRENT STATUS OF CIVIL AIR PATROL

Today, CAP's effort is still that of an all-volunteer force of both people and equipment. The secretary of the Air Force's Public Affairs Office released a report in August of 2015 detailing the level of support that CAP currently provides to the United States. The report states that CAP has more 57,000 people who use around 550 assigned aircraft to augment homeland security objectives.⁴⁸ In all, CAP provides more than 100,000 hours of support by flying missions, including disaster relief, search and rescue activities, and counter drug surveillance operations.⁴⁹ CAP's all-volunteer force helps set the foundation for implementing similar programs across the United States. This section assesses how CAP provides a cost-effective solution in organizing, training, and equipping volunteers to meet the current need to assist with homeland security.

Civil Air Patrol detachments across the country provide a cost-effective solution to augment the USAF. Since 2007, Congress and the DOD have appropriated

⁴⁷ CAP, *Support for the President's*, 1.

⁴⁸ Stanfield, "Civil Air Patrol."

⁴⁹ Ibid.

approximately \$35 million per year to help fund CAP missions.⁵⁰ Most of the money directly supports the aircraft maintenance and flying-hour budgets for the organization.⁵¹ As stated earlier, CAP flies approximately 100,000 hours per year in support of homeland security operations, and CAP's average cost to operate is roughly \$350 per flying-hour. Now compare CAP's relatively low cost per flying-hour to what the USAF spends on operating its fleet of fighter aircraft. According to James Fallows of *The Atlantic*, the USAF spends around \$11,500 to \$35,000 per flying-hour, depending upon the type of plane. For example, the A-10 cost less to operate than the newest fighter in the fleet, the F-35.⁵² However, the dollar-to-dollar comparison does not paint the entire picture. Obviously, flying fighter aircraft costs more money to operate than the light, single-engine aircraft utilized by CAP. Even so, the comparison demonstrates how expensive flying can be and how utilizing a volunteer force helps drive the operating costs per flying-hour down to an affordable level.

CAP detachments rely on a diverse assortment of people and physical assets to fulfill the assigned missions. Specifically, CAP provides a robust set of capabilities in the form of airplanes, pilots, and ground based volunteers. According to the 2012 GAO on CAP operations, CAP organizes itself into 52 wings, one per each state and one for DC and Puerto Rico. Each wing then divides itself into smaller squadrons that focus on providing assistance in their local areas. CAP squadrons are located in nearly every major city and in many rural areas across the nation. In all, the organization boasts having more than 1,500 squadrons and more than 61,000 volunteers. Moreover, many of the volunteers within CAP are the youngsters who form the organization's cadet corps, and adult volunteers fulfill roles as pilots or aircrew, administrators, and as cadet mentors.⁵³ In addition, each wing and squadron has access to aircraft and support equipment.

⁵⁰ U.S. Government Accounting Office [GAO], *Homeland Security: Civil Air Patrol Involved in Certain Missions, but DHS Should Assess the Benefits of Further Involvement* (GAO-13-56) (Washington, DC: U.S. Government Accounting Office, 2012), 7.

⁵¹ *Ibid.*, 6–7.

⁵² “The Pentagon’s 1.5 Trillion Dollar Mistake,” video embedded in James Fallows, “Military Spending is Broken,” *The Atlantic*, January/February 2015, <http://www.theatlantic.com/magazine/archive/2015/01/the-tragedy-of-the-american-military/383516/>, 1:31.

⁵³ GAO, *Homeland Security*, 6–7.

Altogether, CAP operates “550 single-engine aircraft, 42 gliders, and 960 vehicles.”⁵⁴ This broad national organization invites volunteers from all ages and diverse backgrounds to serve in positions reinforcing homeland security for the United States.

So then, exactly how does CAP use its resources of both volunteers and federal money to assist with homeland security? Even with a very limited resource pool of people and planes, CAP provides a unique asset to homeland security and defense. Air Force Secretary Deborah James calls CAP, “A strategic partner . . . saving the Air Force almost 40 times the cost of using military assets for each hour served.”⁵⁵ Secretary James’s comment about the partnership refers to the critical missions that the volunteer force provides to the nation. CAP missions provide real-time reconnaissance efforts that support both LE and DHS operations.⁵⁶ For example, “intelligence and warning operations” along with “domestic counterterrorism” are two of the six critical mission sets that CAP provides to DHS. To fulfill its homeland security mission, CAP provides intelligence officials with imagery from reconnaissance missions. Intelligence analysts use the information provided by CAP missions to establish patterns of life and other trends that aid in detecting criminal activity.⁵⁷ In all, CAP delivers a unique but limited resource to the intelligence apparatus for DHS as demonstrated through some of the organization’s success stories.

The 2012 GAO report reiterates that CAP provides critical support to homeland security in three major areas.⁵⁸ First, CAP missions help by enhancing security and providing deterrence for domestic terrorism. Second, CAP assets surveille the nation’s borders, thus providing an extra layer of border security. Most notably, CAP helps with both disaster relief and search and rescue operations for lost and stranded individuals. In all, CAP spends approximately nine percent of its flying-hour budget to support DHS related missions. In addition, GAO estimates that CAP spends an additional 28 percent of

⁵⁴ GAO, *Homeland Security*, 6.

⁵⁵ Stanfield, “Civil Air Patrol.” 1.

⁵⁶ CAP, *Support for the President’s*, 5.

⁵⁷ *Ibid.*, 7–8.

⁵⁸ GAO, *Homeland Security*, 9.

its flying-hour budget to support LE activities. Many of CAP's LE related missions have helped authorities with drug interdiction and spotting operations (such as looking for marijuana growing sites).⁵⁹ These DHS and LE support missions account for 37 percent of CAP's flying-hour budget. CAP uses the other 63 percent of its flying time to focus on training and preparation for homeland security support.

Although two thirds of its flying time may seem like a lot of time and money spent on auxiliary tasks, most of the training missions focus on building the piloting skills required to support the USAF, DHS, and LE agencies effectively. The 2012 GAO report notes, "CAP intends for its training and pilot certification missions to prepare its pilots and other volunteers to perform homeland security-related missions."⁶⁰ Inevitably, all of CAP's arduous training pays off when volunteers find themselves flying direct support missions for homeland security operations. For example, 90 percent of the CAP organizations interviewed by the GAO reported flying missions directly aimed at preventing terrorism.⁶¹ Ultimately, CAP skillfully uses its limited resources of volunteers, planes, and federal funding to help bolster the defense apparatus of the United States.

C. HOW TO INTEGRATE CIVIL AIR PATROL INTO THE DHS INTELLIGENCE COMMUNITY

So far, this thesis discussion has detailed CAP's historical actions and laid out the current utility of the organization as it relates to the generic spectrum of homeland defense. This section of the chapter focuses on how CAP both economically and strategically fits into the narrower scope of homeland security intelligence. To better understand how to integrate CAP into DHS intelligence missions, we must fully understand how DHS attempts to combine intelligence into daily operations. Michael Studeman wrote about homeland security intelligence in the *International Journal of Intelligence and Counterintelligence*, in which he explained, "Homeland security intelligence blends traditional and nontraditional sources of information, and operates in

⁵⁹ GAO, *Homeland Security* 9.

⁶⁰ *Ibid.*, 10–11.

⁶¹ *Ibid.*, 11.

many intelligence domains as it provides . . . actionable insights for homeland security stakeholders.”⁶²

CAP is equipped to provide cost-effective solutions for DHS and LE intelligence requirements because of the minimal budgetary impact imposed by the all-volunteer force. Similarly, Henry Crumpton lays out a very solid argument for LE and DHS to change the way they approach protecting the nation. He suggests that ever-shrinking intelligence budgets will limit the nation’s ability to rely solely on expensive technologies to procure information against enemies and probable attackers. Crumpton defends his assertion by stating that reliance on technology will ultimately cost the government more money than what is available in the national coffers. Instead, Crumpton suggests that a reliance on cost-effect intelligence coupled with expert analysis to help enlighten those charged with protecting the homeland.⁶³ Crumpton says, “Intelligence enables homeland defenders to use limited resources effectively and saves the taxpayer dollars.”⁶⁴ As stated earlier, when compared to large national organizations such as the U.S. Air Force, CAP is a cost-effective solution for homeland defense issues. Moreover, CAP brings a unique capability to provide access to the air domain thus rendering an additional set of tools for homeland security intelligence.

To effectively utilize CAP assets, DHS must first understand the inherent capabilities and limitations of the volunteer organization. Then, according to the logic of an argument posited by Mark Lowenthal, DHS should task CAP to collect information for a set of predetermined requirements. Within the intelligence life cycle, Lowenthal says, “Some requirements will be better met by specific types of collection.”⁶⁵ According to Lowenthal’s logic on requirements-based tasking, intelligence professionals can match an intelligence demand to an actual capability. Accordingly, CAP’s capabilities can potentially provide DHS with a cost-effective solution to obtain high-quality surveillance

⁶² Michael Studeman, “Strengthening the Shield: U.S. Homeland Security Intelligence,” *International Journal of Intelligence and Counterintelligence* 20 no. 2 (2007): 212.

⁶³ Crumpton, “Intelligence and Homeland Defense,” 205–206.

⁶⁴ *Ibid.*, 206.

⁶⁵ Mark Lowenthal, *Intelligence: From Secrets to Policy*, 6th ed. (Washington: CQ Press, 2012), 71.

and intelligence information. For example, CAP has the ability to provide what Lowenthal labels as “activity based intelligence” or ABI. Collection of ABI helps LE agencies determine patterns of behavior of criminals or terrorist organizations. Lowenthal suggests that the best ABI often comes from aerial monitoring and surveillance platforms.⁶⁶ A creative thinker can understand how to fully implement CAP assets into the discussion of providing cost-effective intelligence solutions for DHS and homeland security professionals.

Finally, this section concludes by reiterating the mandate that GAO provided in 2012, which requires DHS to establish policies that better integrate CAP into homeland defense strategies. According to GAO, CAP has reached out several times to DHS in an effort to extend its services to the nation. Furthermore, the 2012 report suggests that DHS should look for a long-term solution of incorporating CAP into a broader range of homeland security missions.⁶⁷ In addition, GAO suggests that DHS has failed to implement policies that would help CAP gain access into a broader range of defense related missions.⁶⁸ Perhaps DHS should consider GAO’s 2012 recommendations to allow CAP to fly more missions in direct support of homeland security. Increasing CAP’s mission load could ultimately drive its percentage of direct support sorties to DHS up from the mere nine percent mentioned earlier. As stated earlier, increasing CAP support to DHS may require additional funding from the federal government.

With shrinking budgets and increased prominence of the homeland security mission, why does DHS fail to evolve and allow CAP into the Intelligence Community (IC)? Perhaps the answer to the question lies in how government bureaucracies often fail to adapt to the changing environment. The GAO report urges both the DHS secretary and the U.S. Air Force secretary to take measures to fully incorporate the cost-effective solutions that CAP provides in homeland security intelligence.⁶⁹ To better understand organizational failures of the IC, Amy Zegart provided a scathing review of current state

⁶⁶ Ibid., 113.

⁶⁷ GAO, *Homeland Security*, 22-23.

⁶⁸ Ibid.

⁶⁹ Ibid., 25.

of affairs when she declared, “The U.S. intelligence community is still struggling to develop the rudimentary building blocks to combat terrorism.”⁷⁰ Sadly, DHS has failed to broaden the role of both CAP and other volunteer organizations to provide cost-effective solutions for homeland security.

D. RECENT SUCCESSES FOR CAP AND POSSIBLE WAYS TO EXPAND CAP

The ultimate goal of DHS should be to gain a strategic advantage to prevent future enemies from attacking the United States. In meeting the intelligence demands required by LE agencies, DHS should consider a broader incorporation of CAP and other volunteer organizations. Historically, CAP volunteers have provided critical surveillance and intelligence information to ground teams charged with protecting U.S. interests. Therefore, the final section of this chapter highlights some of CAP’s most recent success stories and then advocates for ways to expand both CAP and the use of volunteer organizations to provide an extra layer of security for homeland defense.

Civil Air Patrol volunteers have executed numerous marquee missions in support of several recent events. Most notably, CAP flew missions the day after 9/11. Within six hours of the attacks, CAP aircraft flew the first set of search and rescue missions into the blast zone. In addition, CAP missions included some of the first over-flight sorties of ground zero on September 12. The CAP’s critical first volley of missions provided high-quality intelligence images to ground-based rescue and recovery operations. Additionally, CAP’s effort of support included a wide array of volunteers who also provided ground-based assistance to first responders in fire and police protection services.⁷¹ In all, CAP’s ability to support the nation during the 9/11 disaster demonstrated the organization’s flexibility in meeting diverse requirements and its ability mobilize at a moment’s notice.

CAP teams also provided a unique intelligence capability to LE and homeland security during the 2002 Winter Olympic Games at Salt Lake City, Utah. In preparation for the games, LE professionals planned for the capabilities of local CAP assets to help

⁷⁰ Amy Zegart, *Spying Blind: The CIA, the FBI, and the Origins of 9/11* (Princeton: Princeton University Press, 2009), 195.

⁷¹ CAP, *Support for the President’s*, 14–15.

provide surveillance in and around the Olympic events. During the games, CAP took more than 2,200 high-resolution pictures. The photographs helped produce a near-real-time intelligence feed for Olympic security officials. Additionally, CAP positioned its airborne assets to be able to respond to any tasking by the Olympic Air Operations Center; this resulted in an average response time of five minutes per request.⁷² According to CAP, “at least one law enforcement action was generated each day as a result of CAP’s airborne patrols.”⁷³ Undoubtedly, CAP volunteers helped provide a safe venue for the 2002 Winter Olympic Games. Moreover, using the 2002 Olympics example provides a cogent case illustrative of how DHS and LE can plan to implement CAP into future homeland security protection strategies.

CAP continues to augment the USAF by providing volunteer platforms for search and rescue operations, disaster relief, and mission coordination. With the help of CAP surveillance and technology, CAP kept officials informed on the status of the 2010 British Petroleum (BP) oil spill in the Gulf of Mexico. According to CAP’s official website, disaster response to the oil spill included flying policymakers over the impacted area, transporting support equipment to volunteers, and taking images of the Gulf Coast shoreline. Civil Air Patrol produced between 2,400 to 3,600 pictures of the disaster during the most critical days of the response effort to contain the oil spill. During the month-long crisis, a total of 12 CAP aircraft flew more than 197 hours, which helped determine the extent of the damage caused by the oil slick.⁷⁴ Also during the crisis, CAP demonstrated a capability to provide real-time intelligence that helped decision makers determine the severity of the situation. Again, CAP showed a unique ability to adjust to the requirements of the specified mission and delivered cost-effect intelligence for ground-based decision makers.

So far, this chapter has attempted to demonstrate the unique capabilities that an all-volunteer organization can bring to homeland security. Although seemingly robust,

⁷² Ibid., 16.

⁷³ Ibid.

⁷⁴ Phil Norris, “CAP Members Fly Critical Mission in Oil Spill Response,” Civil Air Patrol Volunteer Now, May 27, 2010, http://www.capvolunteernow.com/todays_features.cfm/cap_members_fly_critical_missions_in_oil_spill_response?show=news&newsID=7751.

CAP simply has too few volunteers and too few assets to adequately fulfill all of the requirements gaps indicated by the 2012 GAO report. However, DHS and LE can use CAP as an example on how to use a volunteer force of pilots in homeland security missions. Using the successes of how CAP responded to 9/11, the 2002 Winter Olympic Games and the BP oil spill provides a foundational understanding the capabilities of the entire organization. Therefore, after increasing CAP's budget, DHS and LE should implement policies that enable CAP to use its assets to help with homeland security missions. Specifically, DHS should build a template that extends CAP's involvement within the following three realms: crisis response, disaster relief, and for preplanned homeland security intelligence operations. Using CAP as the service-based precedent, smaller police forces may be able to leverage the use of volunteer pilots to help support LE missions across the nation.

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III. PUBLIC SAFETY AVIATION ACCREDITATION COMMISSION: THE INDUSTRY STANDARD

The previous chapter illustrated CAP's success in using volunteer aviators to support homeland security missions. Moreover, CAP has established a precedent showing how volunteer pilots can successfully fill a critical void to augment defense organizations such as the USAF. Expanding on CAP's contribution to service-focused aviation, this chapter uses the recommendations of Public Safety Aviation Accreditation Commission (PSAAC) to demonstrate how to run a LE aviation division. Of note, PSAAC is a unique organization offering a comprehensive program, which helps shape the management of a LE based flying unit. Specifically, PSAAC is a non-profit California corporation that is affiliated with the Airborne Law Enforcement Association, which develops professional standards for LE aviation operations.⁷⁵ Examining the recommendations of PSAAC ultimately provides a foundation for comparing the aviation programs of CHP, LCSO, and MCAS. Therefore, this chapter examines PSAAC's recommendations that LE organizations adopt the following practices: craft a mission statement, build a top-down organizational structure, insure a safety-first culture within the unit, create both initial and continuation training programs, and institute an internal pilot upgrade program.

A. PSAAC OVERVIEW

To begin, this chapter argues that PSAAC guidelines serve as the industry's "standards for law enforcement aviation units."⁷⁶ Even though PSAAC holds no intrinsic regulatory power, its recommendations can help existing and aspiring LE aviation units streamline their flying operations.⁷⁷ According to PSAAC, LE agencies should embrace their recommendations "to foster a universal application of the best practices throughout the airborne law enforcement community."⁷⁸ To meet their goal, PSAAC combines the

⁷⁵ Public Safety Aviation Accreditation Commission, "Safety through Standards," accessed October 15, 2016, <http://www.psaac.com/>.

⁷⁶ Public Safety Aviation Accreditation Commission [PSAAC], *Standards for Law Enforcement Aviation Units*, version 6.1 (Frederick, MD: Airborne Law Enforcement Association, 2016), cover page.

⁷⁷ *Ibid.*, 2.

⁷⁸ *Ibid.*

best practices of LE aviation units from both the United States and Canada. Specifically, PSAAC scopes its foundational standards in respect to the administration, operations, safety, and training aspects of the LE aviation mission. The end result is a uniform set of standards that brings credibility to agencies that adopt PSAAC's suggestions.⁷⁹ All told, this research project focuses on the core competencies offered by PSAAC. Therefore, the following paragraphs illustrate the details of each the six programmatic areas addressed within PSAAC's directives.

B. CLEARLY DEFINED MISSION STATEMENT

Law enforcement agencies must scope the operational expectations of their aviation units with a clearly defined mission statement. According to PSAAC, "a mission statement sets broad parameters and identifies the key functions or services to be performed by the aviation unit."⁸⁰ In addition, PSAAC recommends a well-defined mission statement consider the current limitations and capabilities of the aviation unit. Careful consideration in crafting the mission statement should ensure that pilots understand the overall philosophy of the LE aviation unit. In addition, defining the mission enables the aircrew to understand the unit's priorities and allows pilots to make safe tactical decisions while flying. According to PSAAC, another benefit of a clearly defined mission statement is that it sets the tone for the organizational leadership required to run a LE organization.⁸¹ Ultimately, a well-crafted mission statement establishes both leadership expectations and allows LE pilots to operate within a well-defined set of parameters.

C. ORGANIZATIONAL STRUCTURE AND CHAIN OF COMMAND

To operate effectively, an LE aviation unit must first understand where it fits into the entire structure of its agency. Explicitly outlining where the aviation unit fits into the entire LE agency helps delineate the areas of responsibility for the flying organization. Additionally, the flying unit must institute a chain of command to help establish good

⁷⁹ Ibid., 1–2.

⁸⁰ Ibid., 6.

⁸¹ Ibid., " 4–6.

order and discipline within the organization.⁸² Concerning the chain of command, the PSAAC manual says, “Unit members must know to whom they report and how they fit into the function of the agency. All law enforcement agencies utilize organizational charts to depict this, and the aviation function must be included into any organizational chart.”⁸³ Clearly, PSAAC points to the benefits of effective leadership through efficient organizational structure. In essence, strong organizational leadership helps set the tone for LE aviation units and enables mission success.

D. SAFETY-FIRST FLYING CULTURE

Another important facet of ensuring mission success within a flying organization is the unit’s dedication to adopting a safety-first mentality. The PSAAC solution to ensuring a safe flying operation is through use of a safety management system (SMS). A SMS forces pilots to consider the risk factors involved around every aspect of a given mission. In fact, an SMS builds on the safety regulations set forth by the Federal Aviation Administration (FAA). According to PSAAC, a well-run SMS helps pilots identify the safety concerns of day-to-day flying operations. Certainly, a thorough SMS empowers aircrew members to safely tackle the missions assigned by the LE agency.⁸⁴ Additionally, PSAAC recommends that unit commanders institute a policy to allow members to reject a mission or a part of a mission if it goes beyond an acceptable level of risk. To PSAAC, a “turn down policy shall be incorporated that allows any aircrew member (including qualified non-crewmembers) to opportunity to turn down or terminate a mission task.”⁸⁵ Simply stated, every aspect of LE flying training should center on the safe operation of the aircraft while meeting demanding mission requirements. Altogether, LE agencies that adopt PSAAC’s SMS recommendation establish a safety-first culture for both professional and volunteer flying organizations.

⁸² Ibid., 4.

⁸³ Ibid.

⁸⁴ Ibid., 18.

⁸⁵ Ibid.

E. INITIAL FLYING TRAINING PROGRAMS

Law enforcement aviation should focus initial training programs on missionized tasks for their pilot trainees. Authentic in-house training helps prepare fully qualified civilian pilots transition to the demands of LE flying. According to PSAAC, LE agencies should ensure that newly hired pilots meet the minimum qualification standards of the FAA and must demonstrate excellent skills in both airmanship and tactical decision making. In addition, PSAAC recommends that flying training programs go beyond simple flying tasks of take offs and landings.⁸⁶ At a minimum, PSAAC recommends the following in regard to unit derived training programs:

Pilots shall successfully complete a training program on safe and effective profiles while performing missions that are relevant to the unit's mission statement and scope of service (i.e., patrol operations, thermal imagery missions, SAR, etc.)⁸⁷

Applying the PSAAC model to training new LE pilots helps standardize the performance expectations of new recruits.

F. RECURRENT FLYING TRAINING PROGRAMS

The preceding PSAAC recommendation took aim solely at the initial training of a new LE pilot. In addition, PSAAC also recommends that aviation units build a recurrent or continuation training program for veteran LE pilots. A minimum requirement of a continuation training program should include an annual evaluation to determine the mission effectiveness of a veteran LE pilot.⁸⁸ According to PSAAC, "Recurrent evaluations are an effective method of ensuring that unit pilots are flying safely and performing missions in accordance with the standard operating procedures and the applicable *Pilot's Operating Handbook*."⁸⁹ The practice of administering annual flight evaluations to qualified pilots is not uncommon. In fact, *USAF Instruction 11-202* volume 2 states that an annual flight evaluation program allows unit commanders to

⁸⁶ Ibid., 28–30.

⁸⁷ Ibid., 30.

⁸⁸ Ibid., 30–31.

⁸⁹ Ibid., 31.

standardize the flying operations within their unit.⁹⁰ Both PSAAC and the USAF recognize the inherent value that annual evaluations give to flying organizations. Specifically, flying units that prioritize annual flight evaluations help ensure that the LE missions are flown safely, effectively, and with the proper use of risk management techniques.

G. UPGRADE FLYING TRAINING PROGRAMS

An additional PSAAC finding recommends that LE aviation units employ FAA certified flight instructors (CFI) to help with pilot training tasks. To qualify as a LE aviation instructor, the CFI must hold all applicable FAA ratings for the airframes utilized by her or his air division. According to PSAAC, qualified instructors should be the pilots who teach the initial qualification courses, administer the annual flight evaluations, and conduct upgrade instruction for those seeking higher FAA ratings within the unit.⁹¹ Specifically, PSAAC notes, “The CFI shall be designated by the unit manager as a training pilot and qualified in the appropriate category, class, and type (if applicable) of aircraft in which instruction will be conducted.”⁹² Also according to PSAAC, CFIs should have the ability to pass their LE aviation knowledge, judgment, and decision-making skills to a unit’s pilot cadre.⁹³ Furthermore, the CFI bears the responsibility of ensuring that the whole unit receives the training required to safely tackle its LE missions. All told, a CFI becomes the person most responsible for ensuring that all of PSAAC’s recommendations make it to an aviation unit’s fleet of pilots.

H. CONCLUSION AND COMPARATIVE TABLE

This chapter highlights six particular core competencies that PSAAC considers critical for running a LE aviation division. Subsequent chapters evaluate how well the aviation programs of CHP, LCSO, and MCAS measure up to the PSAAC standards. By

⁹⁰ U.S. Air Force, *Aircrew Standardization and Evaluation Program*, Instruction 11–202, Vol. 2 (Washington, DC: Department of the Air Force, 2010), 59.

⁹¹ PSAAC, *Standards for Law Enforcement*, 31–32.

⁹² *Ibid.*, 32.

⁹³ *Ibid.*

design, the structure of the case study analysis follows the outline used in this chapter. PSAAC provides a well thought out set of doctrine to help LE aviators safely accomplish their mission. In my opinion, the recommendations provided by PSAAC clearly follow what I have seen during my career as a fighter pilot in the USAF. Remarkably, PSAAC addresses all of the important aspects required to ensure that mission success.

Explicitly, this project evaluates how well each of the case studies employs the following practices: applying a well-defined mission statement, using a top-down organizational structure (chain of command), ensuring a safety-first mentality toward flying, utilizing a mission focused training program, and developing an internal pilot upgrade program. The repeatable process of comparing each of the three case studies help craft a set of recommendations and identify the best practices. In addition, Table 1 is a template used to consolidate the information gathered in this project and make it easier to conduct a side by side comparison of CHP, LCSO, and MCAS.

Table 1. Public Safety Aviation Accreditation Commission Matrix

PSAAC Considerations	Case Study Meet or Exceed?	Notes and Recommendations
Clearly Defined Mission Statement		
Top-down Organizational Structure (Chain of Command)		
Safety-first Flying Culture		
Training Programs (Initial and Continuation Training)		
In-house Upgrade Program for Aspiring LE Pilots		

IV. CASE STUDIES: CALIFORNIA HIGHWAY PATROL THE PROFESSIONAL APPROACH

To build on the foundational recommendations of PSAAC, this project highlights the robust flying program CHP uses within its air operations division. Specifically, this chapter uses PSAAC's six core competencies as the basis for evaluation of CHP's aviation program. Of note, CHP uses a professional force of paid LE officers as their pilot cadre. The discoveries of this chapter show that CHP efficiently uses public funding to maximize its ability to protect and serve the state of California. Moreover, this chapter systematically reveals how CHP applies the following PSAAC recommendations: apply a clearly defined mission statement, using a top-down organizational structure, ensure a safety-first flying culture, utilize a mission-focused training plan for new and veteran pilots, and develop an in-house upgrade program for aspiring LE pilots. Overall, CHP's professional aviation program serves as a model for building volunteer (non-paid) LE flying divisions.

A. CALIFORNIA HIGHWAY PATROL

Of the three case studies examined by this research project, California Highway Patrol's aviation division has the largest LE flying operation. Accordingly, CHP's Office of Air Operations commands the use of 30 aircraft and 150 flying crewmembers. By using a mix of 15 helicopters and 15 fixed-winged planes, CHP has the flexibility to provide critical airborne operations focusing on public safety for the entire state. Moreover, providing a mission-oriented service for California requires skilled aviators dedicated to a career in community service. To fly for CHP, pilots and crewmembers must prove their dedication to the LE mission while embracing the professionalism required by commercial aviation standards.⁹⁴ Lieutenant (Lt) Mike Sedam notes the following on the people who fly for CHP's air operations branch:

Our crews are highly trained professionals that began their careers as patrol officers. They come from all parts of California, are members of the

⁹⁴ California Highway Patrol, "Office of Air Operations," accessed September 22, 2016, <https://www.chp.ca.gov/find-an-office/headquarters/assistant-commissioner-field/office-of-air-operations>.

communities they serve, and are consummate professionals who focus on their mission to provide the highest level of safety, service, and security. Their skills allow them to successfully complete a multitude of missions including rescues from rocky cliffs, providing advanced life support to injured parties, and managing complex law enforcement events. Every year our crews prevent tragedies by saving hundreds of lives.⁹⁵

As the commander of CHP air operations, Lt Sedam clearly articulates the individual skills and commitment required to successfully run a large professional LE aviation unit. The following research proves that the officers who fly for CHP serve in a well-organized aviation division that safely accomplishes the LE mission.

B. CHP'S MISSION STATEMENT

A clearly defined mission statement allows pilots and crewmembers to understand the overall philosophy of the LE aviation unit. In accordance with PSAAC guidance, the mission statement should consider the current capabilities and limitations of the LE air division thereby allowing the pilots to make smart and safe tactical decisions while flying.⁹⁶ Chapter 1 of CHP's *Air Operations Manual—HPM 100.7* scopes its mission statement with broad language and defers many of the specifics to division field offices. By not issuing a firm mission statement from the top of the organization, CHP allows every field division to standardize its specific operations. To meet the demand, CHP requires each division office to draft and enforce a set of standard operating procedures (SOPs) applicable to their immediate jurisdictions. However, CHP does mandate a minimum set of requirements for every field division's SOP. The CHP's use of individual SOPs can act as the veiled mission statement that PSAAC recommends.⁹⁷ All in all, CHP runs a disparate state-wide organization, and it delegates SOP authority to field divisions, which shows a complete understanding of how decentralize control within its chain of command.

⁹⁵ California Highway Patrol [CHP], *Air Operations Manual*, HPM 100.7 (Sacramento, CA: California Highway Patrol, 2008), 1.3.

⁹⁶ PSAAC, *Standards for Law Enforcement*, 4–6.

⁹⁷ CHP, *Air Operations Manual*, 1.3.

In addition, CHP enables its subdivisions to tailor mission statements to meet the demands of their localities. In doing so, CHP provides an outline on what each field division should consider when creating its unique set of SOPs. On the use of SOPs, CHP states, “Field division air units shall establish a standard operating procedures (SOP) which addresses specific hazards, restrictions, and conditions of operation in areas worked by the aircraft.”⁹⁸ According to CHP, each field division office should carefully consider how each office tackles a broad range of mission sets. For example, CHP recommends that individual SOPs address the following types of missions: high-risk missions, pursuits, enforcement, court liaison, aerial speed enforcement, passenger transportation, and combined operations with other LE agencies.⁹⁹ By outlining where CHP aircraft should operate, the field division sets known boundaries for pilots to operate while on aerial patrol.

Overall, CHP sets broad parameters for its air operations by providing a policy memorandum covering various aspects of a mission statement. In fact, the words “mission statement” are not addressed anywhere in CHP’s *Air Operations Manual—HPM 100.7*. Interestingly though, CHP’s air operations manual has all of the elements of a mission statement as recommended by PSAAC. Unfortunately though, CHP’s mission statement information is loosely scattered throughout the first two chapters of HPM 100.7. According to PSAAC’s recommendation, the mission statement helps set the tone for how a LE aviation unit operates.¹⁰⁰ Therefore, CHP should consider adopting a mission statement that applies to all of the aircrew and platforms flown across the entire state. Adopting an all-encompassing mission statement could help vector the air operations division of the CHP and better equip their pilots to understand the parameters under which they operate.

⁹⁸ Ibid., 2.5.

⁹⁹ Ibid., 2.6–2.9.

¹⁰⁰ PSAAC, *Standards for Law Enforcement*, 2.

C. CHP'S ORGANIZATIONAL STRUCTURE AND CHAIN OF COMMAND

To operate effectively, an LE aviation unit must first understand where it fits into the entire structure of its LE agency. Explicitly outlining where the aviation unit fits into the entire LE agency helps delineate the areas of responsibility for the flying organization.¹⁰¹ The CHP undoubtedly delineates how the Office of Air Operations aligns within the whole agency. In addition, CHP's organizational chart clearly depicts the eight subdivisions that fall under the Office of Air Operations' command authority and where they fall. The Office of Air Operations leads CHP's air branch with the following directive: "The Office of Air Operations is responsible for . . . administering program safety, developing and coordinating initial and recurrent aviation training of program personnel, as well as developing and coordinating aircraft maintenance contracts."¹⁰² Ultimately, CHP uses an effective chain of command in its air division to enable mission success that follows PSAAC's guidance.

CHP's air division goes a step beyond PSAAC's organizational structure guidelines by issuing strict directives on how to employ personnel within field division offices. Furthermore, the duties and responsibilities for every position within a field division office are outlined in the CHP's *Air Operations Manual*. Field division commanders and unit pilots alike can find their specific roles and responsibilities outlined in CHP's *Air Operations Manual*. For example, CHP states, "Division commanders are directly responsible for their air operations units. The Division commander shall ensure that all air operations comply with this manual and the unit SOP, as appropriate."¹⁰³ As such, the CHP air operations manual clearly delineates the authorities found within each position of the air branch.¹⁰⁴ Clearly, CHP embraces PSAAC's notion of effective leadership through efficient organizational structure. In fact, CHP's organizational structure and chain of command could be used as an example for existing and future LE aviation units to emulate.

¹⁰¹ Ibid., 4-6.

¹⁰² CHP, *Air Operations Manual*, 1.3.

¹⁰³ Ibid., 1.4.

¹⁰⁴ Ibid., 1.9-1.11.

D. CHP'S COMMITMENT TO SAFETY-FIRST FLYING CULTURE

To protect the health of the fleet and ensure mission success, a flying organization must adopt a safety-first mentality. PSAAC's solution to ensuring a safe flying operation is through use of an SMS. An SMS builds on FAA safety regulations and forces pilots to consider the risk factors involved around every aspect of a given mission.¹⁰⁵ Although the CHP does not refer to its safety program as an SMS, the air division explicitly demands that safety and risk management drive its flying operations. Additionally, the CHP explicitly addresses safety in the opening remarks of the *Air Operations Manual*, in which it is written, "Safety shall be the overriding and paramount consideration when administering or conducting any departmental aviation operation. Air operations managers, supervisors, and crew members shall ensure that this policy is followed at all times."¹⁰⁶ By making safe flying operations a foundational component of CHP's air division, the organization definitely embraces a safety-first flying culture.

CHP's *Air Operations Manual* actually dedicates an entire chapter to outline the expectations of a CHP field division's safety program. The CHP aviation program seeks to ensure that all flying operations follow federal regulations and departmental SOPs. Therefore, the CHP *Air Operations Manual* mandates that field division commanders appoint a veteran pilot to the role of unit safety officer. Accordingly, CHP's *Air Operations Manual* states that the safety officer must ensure that each field division upholds the highest standards for safe aircraft operations. To make sure that field divisions adhere to a culture built around safety, CHP dictates that unit safety officers conduct meetings on a quarterly basis to share concerns and unit flying trends with the entire field division.¹⁰⁷ From my experiences, quarterly safety meetings help pilots discuss recent mishaps, current events, and a game plan for future contingencies. In

¹⁰⁵ PSAAC, *Standards for Law Enforcement*, 18.

¹⁰⁶ CHP, *Air Operations Manual*, 1.3.

¹⁰⁷ *Ibid.*, 5.3-5.4.

addition, establishing the safety-first culture helps pilots safely push the envelope while meeting the demands of the mission.¹⁰⁸

The CHP also set boundaries on the length of an official duty day and the amount of rest that aircrew members must acquire between shifts. According to CHP's *Air Operations Manual*, a pilot may only work a maximum 12 hours per day before requiring supervisor approval to continue working into the 13th hour and beyond. In addition, CHP further restricts aircrews to logging a maximum of eight hours of flight time during one shift.¹⁰⁹ Dictating a pilot's maximum work schedule and minimum rest requirements is a practice also used by the USAF. For USAF pilots, the standard duty period is 12 hours on and 12 hours off for aircrew who plan to operate aviation equipment.¹¹⁰ Similarly, CHP mandates that aircrew achieve a minimum of 10 hours of rest between shifts requiring the operation of any CHP airplane or helicopter.¹¹¹ By adopting the crew rest mandate, CHP's air division takes its safety program a step farther than PSAAC's recommendations.

CHP's aviation program adequately addresses the safety concerns proposed by PSAAC. The CHP's *Air Operations Manual* clearly sets the tone for how field division offices should run flying operations. By making safety a top priority, CHP's air division creates an atmosphere of trust between the agency's leadership and aircrew. Ultimately, CHP's dedication to a safety-first culture enables pilots to assess the risks associated within a given mission and make a go or no-go decision without fear of reprimand. In addition, CHP's consideration for crew rest requirements demonstrates its desire to decrease the flying risks often found because of fatigue. Conclusively, CHP's professional approach to safety brings credibility to the organization and could be used as an example for any LE aviation program.

¹⁰⁸ I make this statement as both an instructor for the USAF in the F-35 and A-10 and as an FAA certified flight instructor. I have more than 2,000 hours flying and more than 600 hours of flying instruction.

¹⁰⁹ CHP, *Air Operations Manual*, 5.11–5.12.

¹¹⁰ U.S. Air Force [USAF], *General Flight Rules*, Instruction 11–202, Vol. 3 (Washington, DC: Department of the Air Force, 2012), 99–100.

¹¹¹ CHP, *Air Operations Manual*, 5.11.

E. CHP'S INITIAL FLYING TRAINING PROGRAM

According to PSAAC, Law enforcement agencies should ensure that newly hired pilots meet the minimum qualification standards of the FAA. In addition, new hires must demonstrate excellent skills in both airmanship and tactical decision making. Law enforcement agencies should create authentic in-house training programs that ultimately prepare new hires for the rigors of LE aviation.¹¹² To be admitted into CHP's aviation operations, a qualified candidate must have served as a CHP officer for at least two years.¹¹³ In addition, CHP requires that applicants into the air division must hold FAA commercial pilot and instrument pilot ratings.¹¹⁴ By requiring an FAA commercial and instrument rating, the CHP gets a seasoned pilot without having to pay for the initial cost to train that specific pilot.

PSAAC explicitly recommends that flying training programs go beyond simple flying tasks of take offs and landings.¹¹⁵ Therefore, hiring seasoned pilots helps make the transitional phase of LE indoctrination flying an easier task for CHP's field division offices. Section 3 of CHP's *Air Operations Manual* says, "The pilot trainee program is designed to develop piloting skills and accumulate the number of flight hours necessary to meet the requirements of a departmental pilot."¹¹⁶ Furthermore, CHP expects pilot trainees to complete their initial training in the air branch within six months of beginning the flying program. After trainees complete the initial indoctrination training, the newly certified aircrew members may participate in LE aviation mission. CHP expects new pilots to have minimum proficiency to tackle the rigors of LE flying at the completion of the initial training program.¹¹⁷

CHP's flying training program applies a missionized approach to teach seasoned aviators to become LE pilots. Specifically, section 4 of CHP's *Air Operations Manual*

¹¹² PSAAC, *Standards for Law Enforcement*, 28–30.

¹¹³ CHP, *Air Operations Manual*, 3.7.

¹¹⁴ *Ibid.*, 3.10.

¹¹⁵ PSAAC, *Standards for Law Enforcement*, 28–30.

¹¹⁶ CHP, *Air Operations Manual*, 3.10.

¹¹⁷ *Ibid.*, 3.11–3.12.

covers the expansive training requirements for both new and veteran pilots. The 11-task and 40-hour minimum syllabus designed by CHP prepares officers in the following aspects of LE aviation: emergency procedures, patrols, vehicle chases, suspect tracking, foot pursuits, K-9 unit assistance, vehicle accident coordination, and other unit specific missions.¹¹⁸ Moreover, newly hired pilots into CHP's aviation division can expect a very high degree of LE training. Clearly, CHP meets the demands established by PSAAC's initial training considerations. A noteworthy takeaway from example of CHP is its initial flying training syllabus. The CHP syllabus prescribes both mission tasks and flight profiles required for each phase of the initial training program. Dictating the specific steps for each training flight helps CFIs develop a mission-ready LE pilot. Undoubtedly, the LE aviation community should consider CHP's flying training program as an industry standard that clearly adheres to PSAAC recommendations.

F. CHP'S VETERAN AND CONTINUATION FLYING TRAINING PROGRAM

PSAAC also recommends that aviation units build a recurrent or continuation training program for veteran LE pilots. A minimum requirement of a continuation training program should include an annual evaluation to determine the mission effectiveness of a veteran LE pilot.¹¹⁹ To meet PSAAC's recommendation, CHP has established a program for LE officers known as recurrent training. The CHP recurrent training program dictates that every pilot receives a minimum of three hours of flying with unit CFI per quarter. A field division's recurrent training program must include a plan to cover instrument flying, night flying, and mountainous flying operations. According to CHP's *Air Operations Manual*, pilots will complete evaluations in the form of the FAA mandated biennial flight review. Achieving the CHP recurrent training and meeting the legal requirements of the FAA biennial flight review keeps CHP's air division in line with PSAAC.¹²⁰ In addition, CHP's recurrent flying training further promotes a safety-first mentality toward aviation. Furthermore, flying under the scrutiny

¹¹⁸ Ibid., 4.131–4.143.

¹¹⁹ PSAAC, *Standards for Law Enforcement*, 30–31.

¹²⁰ CHP, *Air Operations Manual*, 4.4–4.6.

of evaluations and recurrent training also guarantees that pilots are trained to meet the demands associated with LE missions.

G. CHP'S UPGRADE FLYING TRAINING PROGRAM FOR LE OFFICERS

PSAAC recommends that LE aviation units employ FAA accredited CFIs. To qualify as a LE aviation instructor, the CFIs must hold all applicable FAA ratings for the airframes utilized within their air division. According to PSAAC, qualified instructors should be the pilots who accomplish following tasks: teach the initial qualification courses, administer the annual flight evaluations, and conduct upgrade instruction for those seeking higher FAA ratings within the unit.¹²¹ In accordance with PSAAC, CHP employs CFIs as unit training pilots. According to CHP's *Air Operations Manual*, a unit training pilot helps aspiring officers learn the airmanship required to fly LE missions.¹²² Furthermore, CHP's aviation branch requires unit training pilots provide at least three hours of flight instruction per quarter. During the training missions, CHP flight instructors help pass along techniques gleamed from other LE agencies. In addition, unit training pilots adequately train their aircrew to address the special interest items that the supervisory team establishes for the field division.¹²³

Perhaps the most important role that a CHP training pilots bring is their ability to upgrade LE officers to become LE aviators. As referenced in Chapter I, there is an impending shortage of pilots in the United States. Fortunately, CHP has a plan in place to help fill the void in California created by a lack of pre-qualified pilots who want to fly for CHP LE missions. Specifically, CHP's *Air Operations Manual* states, "The potential shortage of qualified pilots makes the concept of developing flight officer skills an alternative to ensure an adequate future reserve of qualified pilots."¹²⁴ To make sure that CHP ground patrols have air support, CHP goes above the PSAAC pilot upgrade program

¹²¹ PSAAC, *Standards for Law Enforcement*, 31–32.

¹²² CHP, *Air Operations Manual*, 3.10.

¹²³ *Ibid.*, 4.7–4.8.

¹²⁴ *Ibid.*, 3.10.

recommendations. Finally, CHP's entire training program (initial training, recurrent training, and the use of CFIs) exceeds the recommendations provided by PSAAC.

H. CHP CONCLUSIONS

This chapter looked at CHP's air operation division through the lens of PSAAC's recommendations for LE aviation. Examining CHP's aviation program provides insight into how a professional organization trains and equips its pilots to meet the demands of LE missions. Specifically, this chapter looked how CHP applies the following PSAAC recommendations: applying a clearly defined mission statement, using a top-down organizational structure, ensuring a safety-first flying culture, utilizing a mission-focused training plan for new and already qualified pilots, and developing an in-house upgrade program for aspiring LE pilots. Overall, CHP's aviation operations clearly exceed what PSAAC outlines within its SOP (see Table 2). Of note, some of CHP's best practices include the effective use of a well-defined chain of command, the clear focus on safety, and the attention given to training pilots. It goes without question that CHP's air operations doctrine allows pilots to meet the high-risk demands often associated with LE aviation.

Table 2. CHP's Application of PSAAC Recommendations

PSAAC Considerations	CHP Meet or Exceed?	Notes and Recommendations
Clearly Defined Mission Statement	No: clearly defined mission statement.	All of the information is in the <i>CHP Air Operations Manual</i> ; however, CHP should consider providing a clear mission statement for the entire state-wide agency.
Top-down Organizational Structure (Chain of Command)	Yes: CHP's organizational structure and chain of command are well designed.	CHP's air operations manual clearly spells out the responsibilities of every individual in the aviation division. In addition, all pilot and aircrew members know to whom they report and the boundaries associated with their position in the field division.
Safety-first Flying Culture	Yes: Safety considerations are found throughout CHP's air operations manual.	CHP's dedication to safety is a bench-mark program. Safety concerns are addressed throughout the entire air operations manual.
Training Programs (Initial and Continuation Training)	Yes: Training pilots correctly from the start is a CHP priority.	CHP's initial flying training program consists of a very robust syllabus requiring at least 40 flight hours. In addition, CHP clearly mandates the specific tasks required for each initial training mission. However, CHP could give a little more attention to detail with its continuation training and re-evaluation program.
In-house Upgrade Program for Aspiring LE Pilots	Yes: CHP is ready for the impending pilot shortage.	CHP's use of CFIs to train and retrain current pilots meets PSAAC's recommendations. Of note, CHP shows a willingness to train LE officers in the event of a pilot shortage.

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V. CASE STUDIES: MONTEREY COUNTY'S VOLUNTEER APPROACH

Both Lane County Sheriff's Office (LCSO) in Oregon and Monterey County Aero Squadron (MCAS) in California rely on an all-volunteer force of pilots to augment airborne police operations. Ultimately, the discoveries of this research show that both MCAS and LCSO efficiently use public funding to maximize their ability to protect and serve their jurisdictions. Before starting the data, consider that this thesis project seeks to answer the following question: could incorporating volunteer flying programs assist fiscally constrained LE agencies by providing qualified pilots to support air operations in local jurisdictions?

Overwhelming, the research collected on MCAS and LCSO points to the value added to LE operations because of their volunteer flying programs. The subsequent research question for this project then became this: How should a volunteer flying squadron organize to meet the LE demands of the local sheriff's office? Therefore, this chapter and the next continue with the approach introduced in Chapter IV by using PSAAC recommendations to evaluate the LE aviation programs of MCAS and LCSO. Furthermore, this chapter and Chapter VI systematically reveal how MCAS and LCSO use the following PSAAC recommendations: a clearly defined mission statement, a top-down organizational structure, a safety-first flying culture, a mission-focused training plan for new and already qualified pilots, and an in-house upgrade program for aspiring LE pilots.

A. MONTEREY COUNTY AERO SQUADRON

Monterey County Aero Squadron uses a very structured approach in running its all-volunteer flying squadron. Pursuant to MCAS's bylaws, the organization ensures that "all missions will be flown on a volunteer basis with the understanding that there will be no compensation or reimbursement."¹²⁵ To meet the sheriff's demands, MCAS

¹²⁵ Monterey County Sheriff's Aero Squadron [MCAS], *By-Laws*, Rev 10 (Monterey, CA: MCAS, 2014), 1.

volunteers fly missions in the county's single fixed-wing aircraft. Using an all-volunteer flying force allows MCAS to augment the approximate 250 sheriff's deputies of Monterey County. Combining forces with MCAS, the Monterey Sheriff's Office patrols 3,280 square miles of land and provides protection to the 433,000 people who live inside their jurisdiction.¹²⁶ Ultimately, MCAS's volunteer pilots allow the Monterey sheriff to run a cost-effective LE flying division. The following analysis reveals that MCAS's all-volunteer organization applies most of the principles found within PSAAC's directives.

B. MCAS'S MISSION STATEMENT

A clearly defined mission statement allows pilots and crewmembers to understand the overall philosophy of their LE aviation unit. In accordance with PSAAC guidance, the mission statement should consider the current capabilities and limitations of the LE air division, and allow the pilots to make smart and safe tactical decisions while flying.¹²⁷ In step with PSAAC, MCAS's operations manual provides its pilots with the following mission statement:

The mission of the Monterey County Sheriff's Aero Squadron (MCAS) is to provide aviation assets, on a voluntary basis, no cost basis, in support of the Monterey County Sheriff. All flying activity will be conducted to maximize public and crewmember safety.¹²⁸

This clear mission statement meets the entirety of what PSAAC recommends. Notably, MCAS uses the most succinct and clearly delivered mission statements of the three case studies in this research project. By adopting a continually refined mission statement, MCAS empowers its volunteer pilots to safely fly LE missions to meet the demands of the sheriff's office.

¹²⁶ Monterey County Sheriff's Office, "Monterey County Sheriff's Office," accessed July 8, 2016, <https://www.montereysheriff.org>.

¹²⁷ PSAAC, *Standards for Law Enforcement*, 4–6.

¹²⁸ MCAS, *Operations Manual*, 4.

C. MCAS'S ORGANIZATIONAL STRUCTURE AND CHAIN OF COMMAND

To operate effectively, an LE aviation unit must first understand where it fits into the entire structure of the LE agency. Explicitly outlining where the aviation unit fits into the entire LE agency helps delineate the areas of responsibility for the flying organization.¹²⁹ Again, MCAS clearly establishes the unit's chain of command in two very distinct realms. First, MCAS's operations manual clearly depicts the hierarchy of the entire sheriff's office and definitively shows where the aviation unit fits into the entire puzzle. In addition, the Monterey sheriff appoints a department liaison who coordinates directly with MCAS's board of directors. Second, MCAS uses squadron officers and a board of directors to ensure that the flying operations meet the expectations of the county sheriff.¹³⁰ In all, MCAS has taken great care when it instituted its organizational structure, which allows the all-volunteer organization to effectively augment the Monterey County Sheriff's Office.

Setting up a clear organizational structure allows MCAS to handle the various administrative tasks that can bog down volunteer organizations. Notably, the MCAS board of directors drafted the articles of organization to help facilitate a clear understanding of the roles and responsibilities within the entire organization. For example, MCAS's articles precisely spell out the duties of the following eight positions: commander, vice commander, treasurer, secretary, safety officer, training officer, operations officer, and maintenance officer. Distinctly defining the roles of the board of directors allows the pilots within the organization to volunteer their time effectively and efficiently. Another benefit, according to the MCAS's articles of organization, is that any volunteer member can step up and fill the role of a member who might have to take an extended leave of absence from the organization.¹³¹ By adhering to a strict chain of command and a solid organizational structure, MCAS's volunteer pilots safely operate within the legal constraints imposed by Monterey County. In addition, the MCAS

¹²⁹ PSAAC, *Standards for Law Enforcement*, 4–6.

¹³⁰ MCAS, *Operations Manual*, 3.

¹³¹ Monterey County Sheriff Aero Squadron [MCAS], *Articles of Organization* (Monterey, CA: MCAS, 2016), 8–9.

volunteers clearly meet the PSAAC recommendations concerning implementing an effective organizational structure and a chain of command. Furthermore, MCAS establishes an industry standard for how volunteer flying organizations should define the duties and responsibilities for the critical offices within the squadron.

D. MCAS'S COMMITMENT TO SAFETY-FIRST FLYING CULTURE

To protect the health of the fleet and ensure mission success, a flying organization must adopt a safety-first mentality. PSAAC's solution to ensuring a safe flying operation is through use of an SMS. An SMS builds on FAA safety regulations and forces pilots to consider the risk factors involved around every aspect of a given mission.¹³² The MCAS operations manual adequately addresses the idea of mission success through safe aircraft operations. To illustrate its concerns on safety, MCAS's manual states that "all MCAS members shall perform their duties in a professional manner that promotes safety for all persons through the use of best practices."¹³³ Specifically, MCAS nominates the following five areas of concern for LE aviation: crew resource management, standardization, situational awareness, crew communications, and flight preparation. Each one of MCAS's areas of concern helps guide its volunteer pilots to making safe decisions while flying.¹³⁴ Certainly, MCAS's emphasis on safety helps promote culture of calculated risk management in their application of LE aviation.

Although MCAS is already cognitive of safety, it can take the next step of instituting a safety-first culture by improving its SMS. Specifically, MCAS could mirror the CHP by standardizing the requirement for safety meetings every quarter. In addition, MCAS could incorporate a crew rest program to ensure that the volunteer aviators do not over extend their duty to fly LE missions. For example, MCAS could minimize the element of fatigue by requiring their volunteers to limit the amount of time they spend working outside of the LE environment prior to volunteering for MCAS missions. Overall though, the MCAS program addresses the major safety concerns of LE flying.

¹³² PSAAC, *Standards for Law Enforcement*, 18.

¹³³ MCAS, *Operations Manual*, 4.

¹³⁴ *Ibid.*, 4–5.

However, a couple of simple tweaks to the MCAS SMS would help the all-volunteer flying organization exceed PSAAC's recommendations.

E. MCAS'S INITIAL FLYING TRAINING PROGRAM

According to PSAAC, law enforcement agencies, should ensure that newly hired pilots meet the minimum qualification standards of the FAA. In addition, new hires must demonstrate excellent skills in both airmanship and tactical decision making. Law enforcement agencies should create authentic in house training programs that ultimately prepare new hires for the rigors of LE aviation. Explicitly, PSAAC recommends that flying training programs go beyond simple flying tasks of take offs and landings.¹³⁵ According to the MCAS operations manual, training to operate its fixed-wing airplane consists of putting the upgrading pilot into a simulated mission environment. While conducting maneuvers in training, the pilot trainee must demonstrate excellent airmanship and situational awareness. Furthermore, completion of MCAS's initial training occurs after the pilot passes a training mission with the squadron's chief pilot. Graduated pilots may then schedule themselves for any LE mission that sheriff's office requests of the volunteer organization.¹³⁶

Interestingly, the MCAS operations manual stops short of adopting a syllabus or a standardized set of tasks to perform during initial training. The consideration for not adopting an entire initial training syllabus could be due a lack of funding for training missions. However, a little creativity might help scope a more comprehensive initial training program. For example, MCAS provides the sheriff with the four basic missions of LE patrol, SAR, surveillance, and transportation.¹³⁷ Therefore, MCAS could develop a four-mission syllabus that focuses on the dynamics of each mission type. If funding disallows a robust training syllabus, then MCAS could identify the key tasks conducted in each of the four missions and build an initial program that addresses those concerns. Either way, MCAS could vastly improve its initial training program with a little more

¹³⁵ PSAAC, *Standards for Law Enforcement*, 28–30.

¹³⁶ MCAS, *Operations Manual*, 11–13.

¹³⁷ *Ibid.*, 6–8.

focus on flying tasks that LE aviation requires. Furthermore, implementing a few of these recommendations could help put MCAS's program more in line with PCAAS's doctrine.

F. MCAS'S VETERAN AND CONTINUATION FLYING TRAINING PROGRAM

PSAAC also recommends that aviation units build a recurrent or continuation training program for veteran LE pilots. A minimum requirement of a continuation training program should include an annual evaluation that determines the mission effectiveness of a veteran LE pilot.¹³⁸ For this requirement, MCAS thoroughly follows PSAAC guidance. The MCAS operations manual states that the unit's training officer will administer flight evaluations on an annual basis.¹³⁹ Moreover, the flight evaluation shall "included an assessment of the candidate's situational awareness and ability to respond to operational tasks in a timely manner."¹⁴⁰ By ensuring that the veteran pilots of MCAS receive an annual evaluation, the organization meets the minimum requirements dictated by PSAAC.

G. MONTEREY COUNTY'S UPGRADE FLYING TRAINING PROGRAM FOR LE OFFICERS

PSAAC recommends that LE aviation units employ FAA CFIs. To qualify as a LE aviation instructor, the CFI must hold all applicable FAA ratings for the airframes utilized within their air division. According to PSAAC, qualified instructors should be the pilots who achieve following tasks: teach the initial qualification courses, administer the annual flight evaluations, and conduct upgrade instruction for those seeking higher FAA ratings within the unit.¹⁴¹ Unfortunately, MCAS does not provide opportunities for aspiring LE aviators to progress through the FAA certifications of private, instrument, and commercial ratings. Admittedly, the primary constraint for not upgrading LE officers is due to a lack of dedicated funding for training LE officers to become pilots. Therefore,

¹³⁸ PSAAC, v 30–31.

¹³⁹ MCAS, *Operations Manual*, 14.

¹⁴⁰ *Ibid.*

¹⁴¹ PSAAC, *Standards for Law Enforcement*, 31–32.

to reduce costs to Monterey County, every applicant is judged to the private pilot standards and must hold a valid FAA certificate. In fact, MCAS requires unqualified applicants to receive training outside of MCAS to ensure a minimum set of standards prior to flying for the organization. In short, the volunteer flying organization does not intend to train new pilots with county's airplane on the county's budget.¹⁴² After all, training a qualified pilot to cope with the demands of LE aviation is cheaper than training a brand new pilot with no flight experience. Should public money become available, however, MCAS could adopt a syllabus that teaches LE officers to become LE pilots with the use of their volunteer CFIs. See Table 3 for a summary of how MCAS applies PSAAC recommendations.

¹⁴² MCAS, *Operations Manual*, 11.

Table 3. MCAS's Application of PSAAC Recommendations

PSAAC Considerations	MCAS Meet or Exceed?	Notes and Recommendations
Clearly Defined Mission Statement	Yes: Best of the three case studies.	MCAS clearly dictates the expectations of the all-volunteer force of aviators.
Top-down Organizational Structure (Chain of Command)	Yes: An example for any volunteer LE aviation program.	MCAS illustrates the organizational structure for the organization and the chain of command that MCAS falls under for the entire sheriff's office. In addition, MCAS explicitly details the roles and responsibilities of the pilot members in the organization.
Safety-first Flying Culture	Yes: Can use some slight improvements.	MCAS could build on its SMS by including quarterly safety meetings to discuss current operations, future game plans, and recent safety incidents within the organization. Additionally, MCAS should consider adopting crew rest policies that address the risk factors associated with fatigue.
Training Programs (Initial and Continuation Training)	Yes: Could use some improvements.	MCAS has a training program that helps seasoned pilots adjust to LE aviation. A future improvement could include the use of a missionized syllabus to ensure a basic set of tasks are accomplished during initial and recurrent training of LE pilots.
In-house Upgrade Program for Aspiring LE Pilots	No	MCAS does not have the funding to train brand new pilots. Should the money become available, MCAS could use the unit's CFIs to help build the future generation of LE aviators.

VI. CASE STUDIES: LANE COUNTY'S VOLUNTEER APPROACH

A. LANE COUNTY SHERIFF'S OFFICE

The Lane County, Oregon, Sheriff's Office has the smallest aviation operation of the three LE agencies examined in this research project. As such, LSCO describes its jurisdictional responsibilities by stating,

Lane County covers over 4,600 square miles, and is nearly the size of the state of Connecticut. Over 200 staff, along with many volunteers, support these services and utilize land, marine, air and other assets to maximize our response capability.¹⁴³

As this indicates, volunteer agencies help to run the county's LE aviation program. According to LCSO chief pilot Jim Hunt, Lane County operates a single helicopter at the discretion of the sheriff's office. Hunt says that the volunteer flying organization has a total of three pilots who help LSCO meet the primary mission of LE and SAR activities. Utilizing the volunteer services of the three pilots helps the local LE team protect and serve the county surrounding the Eugene, Oregon area.¹⁴⁴ The following analysis demonstrates multiple ways where LCSO can improve the LE flying program by adopting some of PSAAC's guiding principles.

B. LCSO'S MISSION STATEMENT

A clearly defined mission statement allows pilots and crewmembers to understand the overall philosophy of the LE aviation unit.¹⁴⁵ Lane County's aviation unit lays out its policy directives in G.O. 10.06, which is dated March 21, 2015. Under G.O. 10.16, the aviation unit's mission statement says the following:

¹⁴³ Lane County, Oregon, "Lane County Sheriff's Office," accessed September 29, 2016, <http://www.lanecounty.org/Departments/Sheriff/Pages/default.aspx>.

¹⁴⁴ Jim Hunt, Lane County Sheriff's Office volunteer pilot and certified flight instructor, interview with author, August 11, 2016.

¹⁴⁵ PSAAC, *Standards for Law Enforcement*, 4–6.

The Lane County Sheriff's Office (SO) Aviation Unit shall provide air support to ground based units of the SO engaged in all facets of law enforcement activities serving the citizens of Lane County. Additionally, the aviation unit, when resources are available and upon request, may provide air support to other law enforcement agencies primarily within Lane County and secondarily within the State, within the scope of mutual aid during life-threatening, emergency situations.¹⁴⁶

In accordance with PSAAC recommendations, LSCO should consider the current capabilities and limitations of the LE air division thereby allowing the pilots to make smart and safe tactical decisions while flying.¹⁴⁷ By and large, LCSO follows the PSAAC's recommendations concerning mission statement because it defines the boundaries of how the sheriff wants the helicopter used. Specifically, LCSO's mission statement is broad enough to allow pilots and aircrew to make tactically focused decisions while supporting LE and SAR missions.

C. LCSO'S ORGANIZATIONAL STRUCTURE AND CHAIN OF COMMAND

To operate effectively, the LE aviation unit must first understand where it fits into the entire structure of the LE agency. Explicitly outlining where the aviation unit fits into the entire LE agency helps delineate the areas of responsibility for the flying organization.¹⁴⁸ Unfortunately, LCSO's operations manual is a work in progress. In fact, G.O. 10.16 does not explicitly provide the pilots with a squadron chain of command. Additionally, LCSO fails to provide a list of roles and responsibilities for its members who help with the administrative processes of running a volunteer organization. The current membership in LCSO's aviation division is only three pilots and coordinating the actions of such a small group of individuals should not be a daunting task. To improve operations, LCSO should consider drafting a conceptual model for what a future chain of command would look like in a more robust organization. For example, LCSO could start by defining the duties required to ensure that the aviation division is compliant with both

¹⁴⁶ Lane County Sheriff's Office [LCSO] *Helicopter Procedures*, G.O. 10.06 (Eugene, OR: Lane County Sheriff's Office, 2015), 1.

¹⁴⁷ PSAAC, *Standards for Law Enforcement*, 4–6.

¹⁴⁸ *Ibid.*

federal and county regulations. In essence, defining the roles of the volunteer positions can help streamline flying operations and execute LE mission in accordance with its mission statement.

D. LCSO’S COMMITMENT TO SAFETY-FIRST FLYING CULTURE

To protect the health of the fleet and ensure mission success, a flying organization must adopt a safety-first mentality. PSAAC’s solution to ensuring a safe flying operation is through use of an SMS. An SMS builds on FAA safety regulations and forces pilots to consider the risk factors involved around every aspect of a given mission.¹⁴⁹ Specifically addressing safety, LCSO’s operations manual dictates, “The helicopter will, at all times, be operated and maintained in compliance with the manufacturer’s guidelines and State and FAA rules and regulations.”¹⁵⁰ Accordingly, the majority of LCSO’s safety protocols focus on the safe handling of its helicopter and ensuring that pilots adhere to the weather limitations and airspace restrictions set by the FAA.¹⁵¹ The LCSO safety program is still a work in progress. Mirroring the CHP and MCAS SMSs could help LCSO build a safety program that fulfills the PSAAC recommendations.

Lane County’s flying operations may not employ a fully functioning SMS; however, its understanding of crew rest far exceeds the details provided by CHP and MCAS. As such, LE agencies should consider replicating LCSO’s approach towards limiting a pilot’s duty day. Lane County provides strict guidance to ensure aircrew members receive an appropriate amount of crew rest before flying LE missions. For example, LCSO mandates the maximum hours of flight time that a pilot can log for the following timeframes: a 24-hour period, a 48-hour period, a 72-hour period, a five-day period, and a 30-day period. For a pilot to exceed the maximum hours during any given time, she or he must receive explicit permission from the sheriff or division commander.¹⁵² Placing a high degree of scrutiny on a pilot’s rest cycle shows that LCSO

¹⁴⁹ PSAAC, *Standards for Law Enforcement*, 18.

¹⁵⁰ LCSO, *Helicopter Procedures*, 1.

¹⁵¹ *Ibid.*, 2–3.

¹⁵² LCSO, *Helicopter Procedures*, 4–5.

understands the risk factors that often occur with human fatigue. In addition, LCSO's crew rest program is a perfect starting place to launch a full-blown SMS that PSAAC recommends.

E. LCSO'S INITIAL FLYING AND CONTINUATION TRAINING PROGRAMS

According to PSAAC, law enforcement agencies should ensure that newly hired pilots meet the minimum qualification standards of the FAA. In addition, new hires must demonstrate excellent skills in both airmanship and tactical decision making. Law enforcement agencies should create authentic in-house training programs to ultimately prepare new hires for the rigors of LE aviation. Explicitly, PSAAC recommends that flying training programs go beyond simple flying tasks of take offs and landings.¹⁵³ In addition, PSAAC also recommends that aviation units build a recurrent or continuation training program for veteran LE pilots. A minimum requirement of a continuation training program should include an annual evaluation to determine the mission effectiveness of a veteran LE pilot.¹⁵⁴ Admittedly, both LCSO's initial and recurrent training programs are very thin. According to Hunt, the initial training program consists of an initial check out with him as the unit's CFI and chief pilot.¹⁵⁵ As such, initial checkouts for LCSO consist of demonstrating the safe handling of the helicopter and applying advanced aviation skills to the rigors of LE flying. As for continuation training, Hunt also conducts yearly flight review for LCSO's other two pilots. LCSO's training program lacks a syllabus or specified tasks to complete during check rides. However, its program has a lot of room to develop as the aviation unit continues to blossom in its role as force enablers to the county sheriff's office.

LCSO expects to grow in its endeavors to provide LE aviation services to its jurisdiction. To meet that goal, LCSO should look to sister agencies such as CHP and MCAS, which already apply the PSAAC model to LE aviation. Ultimately, the PSAAC solution suggests that LCSO implement an initial training syllabus for newly acquired

¹⁵³ PSAAC, *Standards for Law Enforcement*, –30.

¹⁵⁴ *Ibid.*, 30–31.

¹⁵⁵ Hunt interview, August 11, 2016.

pilots and develop a continuation-training program. Adopting some of CHP's and MCAS's techniques for developing LE aviators could help standardize the training that new and veteran pilots receive within LCSO's ranks. In addition, the LCSO aviation division should seek to professionalize its administrative policies in regard to training. The overall result of using PSAAC's training recommendations could help LCSO grow from a three-person volunteer group into a larger and more effective arm of the sheriff's department.

F. LCSO'S UPGRADE FLYING TRAINING PROGRAM FOR LE OFFICERS

PSAAC recommends that LE aviation units employ FAA CFIs. To qualify as a LE aviation instructor, the CFI must hold all applicable FAA ratings for the airframes utilized within their air division. According to PSAAC, qualified instructors, should be the pilots who accomplish following tasks: teach the initial qualification courses, administer the annual flight evaluations, and conduct upgrade instruction for those seeking higher FAA ratings within the unit.¹⁵⁶ As a CFI and LCSO's chief pilot, Hunt says, "We want to recruit law enforcement officers who are mission junkies."¹⁵⁷ However, Hunt admits that LCSO does not currently have the funding to upgrade current LE officers to become LE pilots, but he hopes that the agency will consider that course of action in the future. Doctrinally, Hunt sees no problem with volunteer CFIs instructing pilots in their instrument and commercial ratings so long as the training does not interfere with LE missions. For example, Hunt believes LE patrol sorties could fulfill two requirements during one mission. An upgrading pilot could fly in an actual LE mission under the supervision of a qualified LE CFI. Using the county's resource to protect and serve the jurisdiction while growing the next generation of LE pilots provides a winning solution to everyone.¹⁵⁸ I believe that LCSO's desire to instruct while protecting goes above and beyond the PSAAC recommendations. In fact, LCSO's acceptance of growing

¹⁵⁶ Ibid., 31–32.

¹⁵⁷ Hunt interview, August 11, 2016.

¹⁵⁸ Ibid.

new LE pilots should be adopted across the entire spectrum of LE aviation. See Table 4 for a summary of LCSO's implementation of PSAAC recommendations.

Table 4. LCSO's Application of PSAAC Recommendations

PSAAC Considerations	LCSO Meet or Exceed?	Notes and Recommendations
Clearly Defined Mission Statement	Yes: LCSO using a policy directive in lieu of an actual mission statement.	As LCSO continues to grow in people and responsibility, its mission statement should become more refined to reflect the capabilities of the aviation division.
Top-down Organizational Structure (Chain of Command)	No: Not required for a three-pilot operation that LCSO currently employs.	LCSO should consider adopting the PSAAC policies of defining the chain of command and subsequent roles and responsibilities of the pilot members of the flying unit.
Safety-first Flying Culture	Yes: But LCSO does not have an SMS.	LCSO should adopt the safety recommendations found within PSAAC to help instill a safety-first culture in all facets of the unit. In addition, LCSO's application of crew rest policies went above and beyond the PSAAC directives. LE agencies should adopt LSCO's crew rest considerations into its existing SMSs.
Training Programs (Initial and Continuation Training)	No: LCSO relies on one chief pilot (CFI).	LCSO needs to adopt a training syllabus for both initial and continuation training. Employing a missionized syllabus for both sets of training will help standardize the tasks expected of both initial and veteran pilots for the LE agency.
In-house Upgrade Program for Aspiring LE Pilots	No: Due to funding.	LCSO would consider training future LE pilots who are currently police officers once the funding for a training program becomes available.

VII. CONCLUSION AND BEST PRACTICES

The goal in wrapping up this research project is to deliver a set of best-practices that LE agencies can use to build and maintain aviation divisions. After reviewing the case studies, it became very apparent that volunteer pilots could help fiscally constrained LE agencies. To provide a tangible product for LE aviation teams, the results of this project address the following question: How should a volunteer flying squadron organize to meet the LE demands of the local sheriff's office? Each of the three studied organizations operates under a unique set of circumstances that ultimately drive how it equips and manages its LE aviation units. For example, CHP uses a professional force of paid LE officers as its pilot cadre. In contrast, both MCAS and LCSO rely on an all-volunteer force of pilots to augment airborne police operations. The discoveries of this research demonstrate that all three aviation divisions efficiently use public funding to maximize their ability to protect and serve their jurisdictions. In all, examining the recommendations of PSAAC helped sculpt the foundation for comparing the aviation programs of CHP, LCSO, and MCAS. In conclusion, this chapter renders the best practices in each of the following PSAAC principles: crafting a clearly defined mission statement, building a top-down organizational structure, insuring a safety-first culture within the aviation division, creating both initial and continuation training programs, and instituting an internal pilot upgrade program.

A. MISSION STATEMENT: MCAS

Monterey County's air operations manual clearly delivers the most succinct and task-oriented mission statement found in this study. In accordance with PSAAC guidance, a mission statement should consider the current capabilities and limitations of the LE air division thereby allowing the pilots to make smart and safe tactical decisions while flying.¹⁵⁹ In step with PSAAC, MCAS's operations manual provides its pilots with the following mission statement:

¹⁵⁹ PSAAC, *Standards for Law Enforcement*, 4–6.

The mission of the Monterey County Sheriff's Aero Squadron (MCAS) is to provide aviation assets, on a voluntary basis, no cost basis, in support of the Monterey County Sheriff. All flying activity will be conducted to maximize public and crewmember safety.¹⁶⁰

This clear mission statement meets the entire definition that PSAAC recommends. By adopting a continually refined mission statement, MCAS empowers its volunteer pilots to safely fly LE missions to meet the demands of the sheriff's office.

B. ORGANIZATIONAL STRUCTURE AND CHAIN OF COMMAND: MCAS

Monterey County's LE aviation program sets volunteer organizational the benchmark for operating under a definitive chain of command. To operate effectively, the LE aviation unit must first understand where it fits into the entire structure of the LE agency. According to PSAAC, explicitly outlining where the aviation unit fits into the overall LE agency helps delineate the areas of responsibility for the flying organization.¹⁶¹ In addition, MCAS clearly establishes the unit's chain of command in two very distinct realms. First, MCAS's operations manual clearly depicts the hierarchy of the entire sheriff's office and definitively shows where the aviation unit fits into the entire puzzle. In addition, the Monterey sheriff appoints a department liaison who coordinates directly with MCAS's board of directors. Second, MCAS uses squadron officers and a board of directors to ensure that the flying operations meet the expectations of the county sheriff.¹⁶² Furthermore, it is evident that MCAS has taken great care when it instituted its organizational structure, which allows the all-volunteer organization to effectively augment the Monterey County Sheriff's Office.

The establishment of a clear organizational structure allows MCAS to handle the various administrative tasks that can bog down volunteer organizations. Notably, the MCAS board of directors drafted the articles of organization to help facilitate a clear understanding of the roles and responsibilities within the entire organization. For example, MCAS's articles precisely spell out the duties of the following eight positions:

¹⁶⁰ MCAS, *Operations Manual*, 4.

¹⁶¹ PSAAC, *Standards for Law Enforcement*, 4–6.

¹⁶² MCAS, *Operations Manual*, 3.

commander, vice commander, treasurer, secretary, safety officer, training officer, operations officer, and maintenance officer. Distinctly defining the roles of the board of directors allows the pilots within the organization to effectively and efficiently volunteer their time. According to the MCAS's articles of organization, another benefit is that any volunteer member can step up and fill the role of a member who might have to take an extended leave of absence from the organization.¹⁶³ By adhering to a strict chain of command and a solid organizational structure, MCAS's volunteer pilots safely operate within the legal constraints imposed by Monterey County. In addition, the MCAS volunteers clearly meet the PSAAC recommendations of implementing an organizational structure and a chain of command. Overall, MCAS establishes the LE aviation standard that defines how volunteer flying divisions should structure their organization's chain of command.

C. COMMITMENT TO SAFETY-FIRST FLYING CULTURE: CHP AND LCSO

California Highway Patrol's blue-chip SMS helps ensure a safety-first flying culture for its entire agency. According to PSAAC, an SMS builds on FAA safety regulations and forces pilots to consider the risk factors involved around every aspect of a given mission.¹⁶⁴ Although the CHP does not refer to its safety program as an SMS, the air division explicitly demands that safety and risk management drive its flying operations. The CHP explicitly addresses safety in the opening remarks of the air operations manual with the following statement: "Safety shall be the overriding and paramount consideration when administering or conducting any departmental aviation operation. Air operations managers, supervisors, and crew members shall ensure that this policy is followed at all times."¹⁶⁵ By making safe flying operations a foundational component of CHP's air division, the organization definitely embraces a safety-first flying culture.

¹⁶³ MCAS, "Articles of Organization," 8–9.

¹⁶⁴ PSAAC, *Standards for Law Enforcement*, 18.

¹⁶⁵ CHP, *Air Operations Manual*, 1.3.

CHP's *Air Operations Manual* actually dedicates an entire chapter to outline the expectations of a CHP field division's safety program. The CHP aviation program seeks to ensure that all flying operations follow federal regulations and departmental SOPs. Therefore, the CHP *Air Operations Manual* mandates that field division commanders appoint a veteran pilot to the role of unit safety officer. Accordingly, CHP's *Air Operations Manual* states that the safety officer must ensure that each field division uphold the highest standards for safe aircraft operations. To make sure that field divisions adhere to a culture built around safety, CHP dictates that unit safety officers conduct meetings on a quarterly basis to share concerns and unit flying trends with the entire field division.¹⁶⁶ From my experiences, quarterly safety meetings help pilots discuss recent mishaps, current events, and game plan for future contingencies. In addition, establishing the safety-first culture helps pilots safely push the envelope while meeting the demands of the mission.

The CHP has also set boundaries on the length of an official duty day and the amount of rest that aircrew members must acquire between shifts. According to CHP's *Air Operations Manual*, a pilot may only work a maximum 12 hours per day before requiring supervisor approval to continue working into the 13th hour and beyond. In addition, CHP further restricts aircrew to logging a maximum of eight hours of flight time during one shift.¹⁶⁷ Dictating a pilot's maximum work schedule and minimum rest requirements is a practice also used by the USAF. For USAF pilots, the standard duty period is 12 hours on and 12 hours off for aircrew who plan to operate aviation equipment.¹⁶⁸ Similarly, CHP mandates that aircrew achieve a minimum of 10 hours of rest between shifts that require the operations of any CHP airplane or helicopter.¹⁶⁹ By adopting the crew rest mandate, CHP's air division takes their safety program a step farther than the recommendations found in PSAAC.

¹⁶⁶ Ibid., 5.3–5.4.

¹⁶⁷ CHP, *Air Operations Manual*, 5.11–5.12.

¹⁶⁸ USAF, *General Flight Rules*, 99–100.

¹⁶⁹ CHP, *Air Operations Manual*, 5.11.

CHP's aviation program adequately addresses the safety concerns proposed by PSAAC. The *CHP Air Operations Manual* clearly sets the tone for how field division offices should run flying operations. By making safety a top priority, CHP's air division creates an atmosphere of trust between the agency's leadership and aircrew. Ultimately, CHP's dedication to a safety-first culture enables pilots to assess the risks associated within a given mission and make a go or no-go decision without fear of reprimand. In addition, CHP's consideration for crew rest requirements demonstrates its desire to decrease the flying risks often found because of fatigue. Conclusively, CHP's professional approach to safety brings credibility to the organization and could be used as an example for any LE aviation program.

Lane County's application of crew rest adds to the details provided within CHP's *Air Operations Manual*. As such, LCSO provides strict guidance to ensure aircrew members receive an appropriate amount of crew rest before flying LE missions. For example, LCSO mandates the maximum hours of flight-time that a pilot can log for the following time frames: a 24-hour period, a 48-hour period, a 72-hour period, a five-day period, and a 30-day period. For a pilot to exceed the maximum hours during any given period, she or he must receive explicit permission from the sheriff or division commander.¹⁷⁰ Placing a high degree of scrutiny on a pilot's rest cycle shows that LCSO understands the risk factors that often occur with human fatigue. LE agencies should consider replicating LCSO's approach towards limiting a pilot's duty day.

D. INITIAL FLYING TRAINING PROGRAM: CHP

CHP's initial training syllabus helps streamline the process of teaching seasoned pilots to become LE aviators. In addition, CHP's use of syllabus-directed training far exceeds the initial training programs used by MCAS and LCSO. According to PSAAC, LE agencies should ensure that newly hired pilots meet the minimum qualification standards of the FAA. In addition, new hires must demonstrate excellent skills in both airmanship and tactical decision making. Law enforcement agencies should create authentic in-house training programs that ultimately prepare new hires for the rigors of

¹⁷⁰ LCSO, *Helicopter Procedures*, 4–5.

LE aviation.¹⁷¹ To be admitted into CHP's aviation operations, a qualified candidate must have served as a CHP officer for at least two years.¹⁷² In addition, CHP requires that applicants into the air division must hold FAA commercial pilot and instrument pilot ratings.¹⁷³ By requiring an FAA commercial and instrument rating, the CHP gets a seasoned pilot without having to pay for the initial cost to train that specific pilot.

PSAAC explicitly recommends that flying training programs go beyond simple flying tasks of take offs and landings.¹⁷⁴ Therefore, hiring seasoned pilots helps make the transitional phase of LE indoctrination flying an easier task for CHP's field division offices. Section 3 of CHP's *Air Operations Manual* explains, "The pilot trainee program is designed to develop piloting skills and accumulate the number of flight hours necessary to meet the requirements of a departmental pilot."¹⁷⁵ Furthermore, CHP expects pilot trainees to complete their initial training in the air branch within six months of beginning the flying program. After a trainee completes the initial indoctrination training, the newly certified aircrew member may participate in LE aviation mission. Furthermore, CHP expects new pilots to have minimum proficiency to tackle the rigors of LE flying at the completion of the initial training program.¹⁷⁶

CHP's flying training program applies a missionized approach to teach seasoned aviators to become LE pilots. Specifically, Section 4 of CHP's *Air Operations Manual* covers the expansive training requirements for both new and veteran pilots. The 11-task and 40-hour minimum syllabus designed by CHP prepares officers in the following aspects of LE aviation: emergency procedures, patrols, vehicle chases, suspect tracking, foot pursuits, K-9 unit assistance, vehicle accident coordination, and other unit specific missions.¹⁷⁷ Newly hired pilots into CHP's aviation division can expect a very high

¹⁷¹ PSAAC, *Standards for Law Enforcement*, 28–30.

¹⁷² CHP, *Air Operations Manual*, 3.7

¹⁷³ *Ibid.*, 3.10.

¹⁷⁴ PSAAC, *Standards for Law Enforcement*, 28–30.

¹⁷⁵ CHP, *Air Operations Manual*, 3.10.

¹⁷⁶ *Ibid.*, 3.11–3.12.

¹⁷⁷ *Ibid.*, 4.131–4.143.

degree of LE training. Clearly, CHP meets the demands established by PSAAC's initial training considerations. A noteworthy takeaway from CHP's example is its initial flying training syllabus. The CHP syllabus prescribes both mission tasks and flight profiles required for each phase of the initial training program. Dictating the specific steps for each training flight helps CFIs develop a mission ready LE pilot. Undoubtedly, the LE aviation community should consider CHP's flying training program as an industry standard that clearly adheres to PSAAC recommendations.

E. CONTINUATION FLYING TRAINING PROGRAM: CHP, MCAS, AND LCSO

PSAAC also recommends that aviation units build a recurrent or continuation training program for veteran LE pilots. A minimum requirement of a continuation training program should include an annual evaluation that determines the mission effectiveness of a veteran LE pilot.¹⁷⁸ To meet PSAAC's recommendation, CHP has established a program for LE officers known as recurrent training. The CHP recurrent training program dictates that every pilot receives a minimum of three hours of flying with unit CFI per quarter. A field division's recurrent training program must include a plan to cover instrument flying, night flying, and mountainous flying operations. According to CHP's *Air Operations Manual*, pilots will complete evaluations in the form of the FAA mandated biennial flight review. Achieving the CHP recurrent training and meeting the legal requirements of the FAA biennial flight review keeps CHP's air division in line with PSAAC.¹⁷⁹ In addition, CHP's recurrent flying training further promotes a safety-first mentality toward aviation. Furthermore, flying under the scrutiny of evaluations and recurrent training also guarantees that pilots are trained to meet the demands associated with LE missions.

In summary, all of the three case studies in this project should adopt a more rigorous continuation flight training program. From my experience, a continuation training program should go beyond a yearly mission evaluation. Therefore, PSAAC,

¹⁷⁸ PSAAC, *Standards for Law Enforcement*, 30–31.

¹⁷⁹ CHP, *Air Operations Manual*, 4.4–4.6.

CHP, MCAS, and LCSO should consider adopting a recurrent training program that ensures LE pilots routinely train to the tasks identified in both the unit's mission statement and the unit's initial training syllabus. For example, a continuation training program could require that LE aviators meet a minimum number of missionized training events per quarter. The training events should pull directly from the unit's initial training syllabus for new pilots. Adopting a strategy of continuous training has a two-fold effect. First, continually training to specific mission events allows pilots to hone their aviation skills in areas such as vehicle pursuit, aerial reconnaissance, and whatever else the LE agency requires on a daily basis. Second, a structured training program further promotes the safety-first flying culture that both PSAAC and the FAA require of any aviation unit. Ultimately, a well-trained fleet of pilots will help LE aviation divisions safely and efficiently meet the LE demands of their local jurisdictions.

F. UPGRADE FLYING TRAINING PROGRAM FOR LE OFFICERS: CHP AND LCSO

PSAAC recommends that LE aviation units employ qualified CFIs. To qualify as a LE aviation instructor, the CFIs must hold all applicable FAA ratings for the airframes utilized within their air division. According to PSAAC, qualified instructors should be the pilots who accomplish following tasks: teach the initial qualification courses, administer the annual flight evaluations, and conduct upgrade instruction for those seeking higher FAA ratings within the unit.¹⁸⁰ In accordance with PSAAC, CHP employs CFIs as unit training pilots. According to CHP's *Air Operations Manual*, a unit training pilot helps aspiring officers learn the airmanship required to fly LE missions.¹⁸¹ Furthermore, CHP's aviation branch requires unit training pilots provide at least three hours of flight instruction per quarter. During the training missions, CHP flight instructors help to pass along techniques gleaned from other LE agencies. In addition, unit training pilots adequately train their aircrew to address the special interest items that the supervisory team establishes for the field division.¹⁸²

¹⁸⁰ PSAAC, *Standards for Law Enforcement*, 31–32.

¹⁸¹ CHP, *Air Operations Manual*, 3.10.

¹⁸² *Ibid.*, 4.7–4.8.

Perhaps the most important role that CHP training pilots bring is their ability to upgrade LE officers to become LE aviators. As referenced in Chapter I, there is an impending shortage of pilots in the United States. Fortunately, CHP has a plan in place to help fill the void created by a lack of pre-qualified pilots who want to fly for LE missions. Specifically, CHP's *Air Operations Manual* states, "The potential shortage of qualified pilots makes the concept of developing flight officer skills an alternative to ensure an adequate future reserve of qualified pilots."¹⁸³ To make sure that CHP ground patrols have air support, CHP goes above the PSAAC pilot upgrade program recommendations. Overall, CHP's entire training program (initial training, recurrent training, and the use of CFIs) exceeds the recommendations provided by PSAAC.

I believe that LCSO's desire to instruct while protecting goes above and beyond the PSAAC recommendations. In fact, LCSO's acceptance of growing new LE pilots should be adopted across the entire spectrum of LE aviation. As a CFI and LCSO's chief pilot, Hunt says, "We want to recruit law enforcement officers who are mission junkies."¹⁸⁴ However, Hunt admits that LCSO does not currently have the funding to upgrade current LE officers to become LE pilots, but he hopes that the agency will consider that course of action in the future. Doctrinally, Hunt sees no problem with volunteer CFIs instructing pilots in their instrument and commercial ratings so long as the training does not interfere with LE missions. For example, Hunt believes LE patrol sorties could fulfill two requirements during one mission. An upgrading pilot could fly in an actual LE mission under the supervision of a qualified LE CFI. Using the county's resource to protect and serve its jurisdiction while growing the next generation of LE pilots provides a winning solution to everyone.¹⁸⁵

G. FINAL RECOMMENDATIONS

The analysis provided in the sections above offers a thorough recommendation for the best practices discovered in this research project. As such, this thesis used PSAAC to

¹⁸³ Ibid., 3.10.

¹⁸⁴ Hunt, interview with author.

¹⁸⁵ Ibid.

build a repeatable process that allowed for a comparative analysis of organizational structure of CHP, MCAS, and LCSO. Table 5 provides a succinct explanation of the best practices for LE agencies to adopt in either building or tweaking their aviation divisions.

Table 5. Combined Best Practices as Applied to PSAAC Recommendations

PSAAC Considerations	Best Practice	Notes and Recommendations
Clearly Defined Mission Statement	MCAS	MCAS clearly delivers its mission statement within the opening paragraphs of the operations manual.
Top-down Organizational Structure (Chain of Command)	MCAS	MCAS sets the benchmark for volunteer LE flying divisions. MCAS uses a clear chain of command that delineates responsibilities for the entire volunteer organization.
Safety-first Flying Culture	CHP	CHP's first-class safety program uses the most robust SMS in this case study. CHP's SMS includes an appointed safety officer who holds quarterly meetings with the entire cadre of pilots and provides techniques to mitigate common risk factors found in LE aviation.
Training Programs (Initial and Continuation Training)	CHP	CHP uses an initial training syllabus to ensure trainees are exposed to a minimum number of events. Volunteer flying organizations can use the same concept to help expose seasoned pilots to the stresses of LE aviation.
In-house Upgrade Program for Aspiring LE Pilots	CHP and LCSO	CHP and LCSO acknowledge that building LE pilots may be a necessity in the future. The next step is to build a syllabus that builds a LE officer into a LE aviator.

H. FUTURE RECOMMENDATIONS

Future research into the use of volunteer flying operations that support LE missions should examine the financial differences between the costs of a professional force of pilots and that of a volunteer force of pilots. For this study, comparing the

financial implications of the three case studies would have required a complete understanding of the financial budgets of each LE organization and then making assumptions about the fiscal value assigned to each individual air divisions. In addition, future research should examine the fiscal impact to train a LE pilot with an in-house program versus through a traditional flight school.

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