A GRID/GROUP STUDY OF GENDER

PERCEPTIONS OF THE CULTURE OF THE

OKLAHOMA CIVIL AIR PATROL

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CHAPTER I

INTRODUCTION

Background of the Civil Air Patrol

The Civil Air Patrol (CAP) is a national civic organization and the official auxiliary of the United States Air Force. It was created on December 1, 1941, just days before Pearl Harbor was attacked. During World War II, the volunteers of the CAP contributed countless hours, resources, and money to defending the nation's borders. Coastal patrol, search and rescue (SAR), cargo and carrier flights, and towing targets for the Army Air Corps were just a few of the missions assumed by the "Flying Minutemen" (National Headquarters Civil Air Patrol, 2002).

Times have changed and so has the Civil Air Patrol. Public Law 557 passed in 1948 established the Civil Air Patrol (CAP) as the National Auxiliary of the United States Air Force. Today, the CAP operates within three main missions: (a) Aerospace Education, (b) Emergency Services, and (c) Cadet Programs. CAP membership consists of Cadet and Senior members. For cadet membership, youth must be age 12-17, although members may remain cadets until they are 21. CAP members classified as senior members are adults aged 18 and over. All members in the Civil Air Patrol are civilian

volunteers. In addition to these volunteers, Air Force personnel are assigned to provide advice and guidance (National Headquarters Civil Air Patrol, 2002).

The CAP is broken down nationally into eight regions. These regions are further broken down into Wings. Each state, the District of Columbia, and the Commonwealth of Puerto Rico make up the 52 Wings. This study focused on the Oklahoma Wing of the Civil Air Patrol.

The Civil Air Patrol, Gender, and Organizational Culture

As of August 2010, the Oklahoma Wing of the CAP consisted of 398 senior members (adult members) and 310 cadet members (youth members). Approximately 20% of the senior membership was female, and only 3% of the cadet membership was female. According to the US Census Bureau (2010), 50.8% of the state's population in 2010 was female. This disparity between the percentages of adult females in the state population (50.8%) and among female senior members of the Oklahoma Wing of CAP (20%) suggests there may be some underlying reason why women are not involved in the organization. Low participation rate by females in aviation is also reflected in the national statistics for the aviation profession. Nationally, in the field of aviation, only 6.2% of the 613,746 pilot certificates held in 2009 were held by women, and only 21.4% of the 678,181 nonpilot certificates were held by women (FAA, 2009).

Low participation by females in the field of aviation has been well documented for over a decade (Benoff, 2002; Depperschmidt, 2008; FAA, 2009; Gray, 2007; Haynsworth & Toomey, 1998; Holden, 1993; Lebow, 2002; Luedtke, 1993; Ramsey & Ramsey, 1996; Turney, Bishop, Karp, Niemczyk, Sitler, & Green, 2002). While the involvement of women

in the all-volunteer Civil Air Patrol may be higher than in the aviation field in general, it is still far lower than the percentage of females in the population. Because of the low female participation, not only is the Civil Air Patrol missing out on the contributions more women could provide to the organization, but its cadets are missing female role models and leaders that could promote increasing gender equity in the aviation industry. In order to increase female membership, CAP must understand why women are not more involved in the organization. One answer to the gender gap in the CAP may lie in its organizational culture, defined as "shared philosophies, ideologies, values, beliefs, assumptions, expectations, attitudes, and norms (Hellriegel, Slocum, & Woodman, 1992, p. 502). Little is currently known about the organizational culture of the CAP in Oklahoma and how it is perceived by its adult members. Without this information the CAP cannot determine what cultural changes may need addressing within the organization to facilitate increased female participation. This study was intended to address the current lack of research into the organizational culture of the CAP and lay the foundation for continued studies.

Statement of the Problem

A cursory search of ProQuest database for "Civil Air Patrol" found 564 documents as of August 3, 2010. Of these, most were informational articles such as awards received, missions conducted, new capabilities, etc. Two documents were dissertations. In the first titled, *A History of Air University* (Alabama) (Tolson, B., 1983), the Civil Air Patrol was only mentioned in passing. The second dissertation, *The Relationship between Training and Retention in a Volunteer Organization* (Montgomery, J., 2006), dealt with the training and retention of CAP Cadet Members. CAP is a national organization with over 60,000 members, yet virtually no research has been conducted regarding its organizational culture

and the potential impact of this culture on the organization's membership. Therefore, the problem for this study was the absence of perspective on the organizational culture of the Oklahoma CAP. Without this perspective, impacts on gender participation cannot be identified and steps to increase gender equity cannot be developed to optimize the effectiveness of this civic organization in the state.

Purpose of the Study

The purpose of this study was to describe member perceptions of the culture of the Oklahoma CAP. Specifically the study described how senior members of the Oklahoma CAP perceive their roles in the context of Douglas' Grid/Group typology. This study further described and compared differences in how men and women in the organization view its culture.

Research Questions

Two research questions guided this study:

1. What is the perceived culture of the Oklahoma CAP by its senior members, as defined by Douglas' Grid/Group Framework?
2. What differences exist in how male and female senior members of the Oklahoma Wing CAP perceive the organization's culture?

In order to address the second research question, the following null research hypotheses were tested. The hypotheses were tested at $\alpha=0.05$ level.

H_{01}: There is no difference in how male and female senior member of the Oklahoma Wing CAP perceived the organization's culture on the Grid dimension.

H_{A1}: There is a difference in how male and female senior member of the Oklahoma Wing CAP perceived the organization's culture on the Grid dimension.

H_{02}: There is no difference in how male and female senior member of the Oklahoma Wing CAP perceived the organization's culture on the Group dimension.

H_{A2}: There is a difference in how male and female senior member of the Oklahoma Wing CAP perceived the organization's culture on the Group dimension.

These research questions were addressed using quantitative data gained from a research survey based on the Grid/Group typology. Table 1 outlines how each research question was addressed.

Table 1

Research Questions, Data Sources, and Analysis Techniques for the study

Research Question	Data Source	Data Analysis Technique
1. What is the perceived culture of the Oklahoma CAP by its senior members, as defined by Douglas' Grid/Group Framework?	on-line Grid/Group instrument	plotting on Grid/Group diagram and description by Grid/Group Environment
2. What differences exist in how male and female senior members of the Oklahoma Wing CAP perceive the organization's culture?	on-line Grid/Group instrument	t-tests to compare male/female responses on Likert-type scales

Researcher's Perspective

I joined Civil Air Patrol in 1997 with an interest in working with cadets and participating in the CAP's Emergency Services mission. Having had previous experience working with 4-H, I was interested in becoming more involved in another civic organization. The CAP appealed to me because I was able to continue working with youth, as well as

having the opportunity to serve the community through search and rescue and disaster relief efforts.

Through my membership in the organization, I found a passion in aerospace education which has led to a career in the education field as an 8th grade science teacher. I believe that the CAP provides not only valuable emergency relief programs to the state and local communities, but also helps to train future leaders through the cadet program. My personal commitment to CAP and a belief that it would benefit from increased female participation provided the impetus for this study.

Theoretical and Conceptual Framework

This study is grounded in two theoretical stances: (a) Hodgetts and Luthans' six characteristics of a culture (2003), and (b) Douglas' Grid/Group typology of culture relationships (1982). Hodgetts and Luthans (2003) identified six characteristics of a culture. They proposed that culture is: (a) learned, (b) shared, (c) transgenerational, (d) symbolic, (e) patterned, and (f) adaptive. Each of these characteristics is demonstrated in the organization and operation of the Civil Air Patrol, thus justifying its identification as a culture. Each of the characteristics of a culture and an example from CAP are discussed below.

Hodgetts and Luthans' (2003) first characteristic of a culture is that it is *learned*; it is not part of an individual's natural genetic make-up. In the Civil Air Patrol, the learned nature of its traditions and functions is clear. Members participate in numerous training activities to learn to function in the organization and accomplish the three missions of the CAP (aerospace education, emergency services, and cadet programs). One example of this is the

"Level One" or introductory training new members in CAP receive (National Headquarters Civil Air Patrol, 2011b) to learn about the background and functions of the organization.

Hodgetts and Luthans' next characteristic of a culture is that it is *shared*. This characteristic is evident in the CAP. The CAP is a national organization; its goals, missions, successes, and failures belong to each and every member, not any one individual. This structure supports the second characteristic of a culture.

Culture is also *transgenerational*. In CAP, members who are senior in rank (those who have traditionally been in the organization longer) take on the roles of training new members, thus passing on their knowledge and learning to new "generations" of members. CAP is somewhat unique in that those members who are senior in rank are not necessarily senior in age.

Culture has *symbolism*. As an auxiliary of the U.S. Air Force, the CAP has adopted much of the symbolism and traditions of this organization. CAP members wear military style uniforms and practice military customs and courtesies, many of which are symbolic in nature.

The fifth characteristic of a culture is that it is *patterned*. Changes in one area, affect the whole. This patterning can be seen in numerous ways in CAP. For example, in CAP, if there is a safety mishap in one Wing or Region, it may cause new regulations to be implemented across the whole organization (A. S. Wardlaw, personal communication, February 16, 2003).

Finally, cultures are *adaptive*. Throughout its more than 60 years in existence, CAP has adapted from its early coastal patrol missions to the three missions it has today. The

CAP is continuing to adapt and take on new roles, as evidenced by CAP's involvement in homeland security and Operation Liberty Shield (National Headquarters Civil Air Patrol, 2002).

Based on Hodgetts and Luthans' (2003) defining characteristics of a culture, the Civil Air Patrol can be identified and studied as a culture. This study focused on describing perceptions of individuals and gender comparisons within the CAP culture. Mary Douglas' Grid/Group typology (1982) provided a theoretical framework upon which to construct this cultural study. Thus, this study was conceptualized as a study of a specific culture (e.g., the CAP) - specifically an organizational culture - using the lens of the Douglas Grid/Group typology to focus and guide the analysis.

Douglas' work as a cultural anthropologist led her to the development of a typology that looks at the culture of a group in two dimensions: Grid and Group. Harris (2005) asserted that this typology "brings order to experience and provides a common language to explain behaviors and interactions" (p. 34) within a culture.

Douglas (1982) created two dimensions, Grid and Group, to measure cultural relationships. *Grid* is used for the dimension of individuation, while *Group* represents the social incorporation dimension (Douglas, 1982). More specifically, the Grid dimension measures the "degree to which an individual's choices are constrained within a social system by imposed prescriptions such as role expectations, rules, and procedures" (Harris, 2005, p. 34). In a strong Grid environment, individuals are highly constrained by the organization (Harris, 2005). The Group dimension "represents the degree to which people value collective relationships and the extent to which they are committed to the larger social unit"

(Harris, 2005, p. 36). A strong Group environment seeks to preserve the integrity of the organization above even that of the members (Harris, 2005).

Aligned along these two dimensions are four types of social environments (Douglas, 1982). These environments were described by Harris (2005) as follows:

1. Individualist (Weak-Grid/Weak-Group) – focus on individual opportunities and gain.

2. Bureaucratic (Strong-Grid/Weak-Group) – hierarchical environment with little individual autonomy.

3. Corporate (Strong-Grid/Strong-Group) – hierarchical environment with individuals defined by association with group.

4. Collectivist (Weak-Grid/Strong-Group) – achieving group goals and group survival is valued.

The Grid/Group dimensions and the four combination environments are shown graphically in Figure 1.

	Strong Grid, Weak Group *Bureaucrati*c	Strong Grid, Strong Group *Corporate*
	Weak Grid, Weak Group *Individualist*	Weak Grid, Strong Group *Collectivist*

Strong Grid

Weak Grid

Weak Group   Strong Group
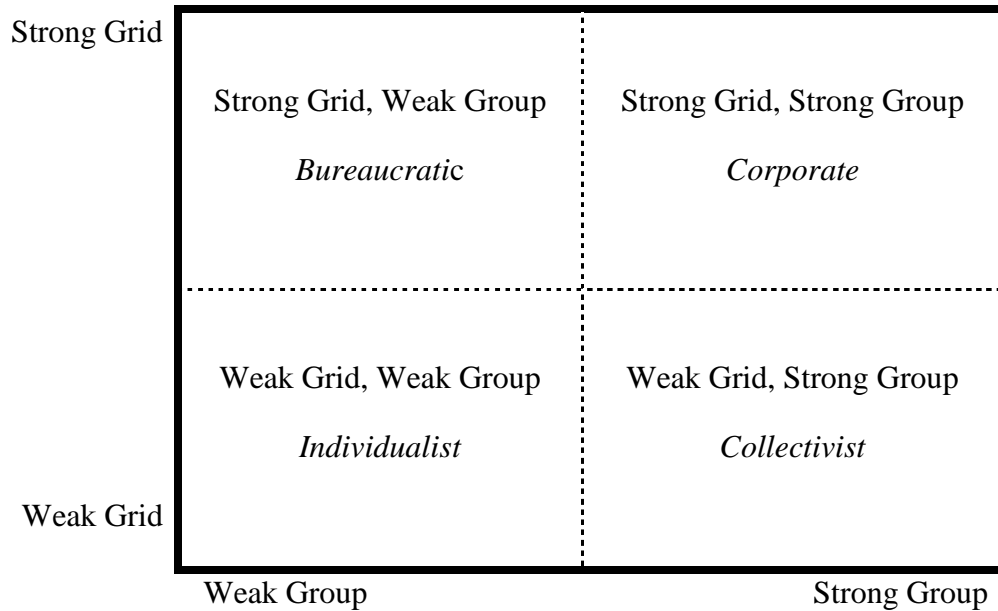
Figure 1. Grid Group Dimensions & Environments as defined by Harris (2005)

From its beginnings in anthropology, the Grid/Group typology has been used to understand many different types of cultures. More recently, this framework has been used extensively in education research (Harris, 2005) to understand the cultures of K-12 schools and higher education. This study will build upon the work done in educational settings and apply it to the volunteer organization of the Civil Air Patrol. The Grid/Group typology provides a theoretical frame and structure for describing and analyzing the way CAP members perceive the organization's culture, as well as a structure and language for discussing these perceptions.

Assumptions, Delimitations, and Limitations of the Study

The following assumptions, delimitations, and limitations were accepted for this study:

1. It was assumed that subjects were knowledgeable and interested in participating in the survey.

2. It was assumed that subjects responded honestly to the research questionnaire.

3. Because this study was delimited to senior members of the Oklahoma CAP, its external validity was limited. No inferences can be drawn from this study regarding the perceptions of youth members or the members of any other CAP Wing.

4. The majority of respondents reported 5 years or less of experience with CAP. Because of this, these members may not have a good understanding of the culture of the organization.

5. Internal validity of the study may have been compromised by non-response bias resulting from individuals who did not choose to answer.

6. The integrity of the study may have been compromised by researcher bias. As an active member of the Civil Air Patrol, the researcher brought personal experiences and perceptions to this study. Because of the researcher's personal interest in this organization, she may have tended to see things in a more positive light or selectively overlook information another researcher may view as important. On the other hand, because the researcher is a CAP member and because she is familiar with this unique organization, it helped her to better understand the experiences of the subjects. Also, because these

members knew this and were familiar with the researcher, it is believed they opened up and shared experiences and perspectives with her they may have been apprehensive of sharing with others. These factors may have increased the internal integrity of the study.

Definitions of Key Terms

Cadet - a member of the Civil Air Patrol who is between the ages of 12 and 21. Individuals must be age 12-17 to join as a cadet, but can remain as a cadet member until age 21 (National Headquarters Civil Air Patrol, 2004). These members were not included in this study.

Senior Member – an active member of the Civil Air Patrol who is over the age of 18 years (National Headquarters Civil Air Patrol, 2004). Subjects in this study were limited to this membership category.

Non-Traditional Career – According to the U. S. Department of Labor (2007), a nontraditional career is any occupation in which one gender makes up twenty-five percent (25%) or less of the total number of employees. Aviation was a non-traditional career in this study.

Culture – Hodgetts and Luthans (2003) identified six characteristics of a culture. Culture is: (a) learned, (b) shared, (c) transgenerational, (d) symbolic, (e) patterned, and (f) adaptive. This definition was used in this study to identify the CAP as a culture that is suitable for studying using culture-describing instruments.

Perceived CAP Organizational Culture – the culture of the Oklahoma Wing CAP as defined by surveyed senior members using the Douglas Grid/Group typology concept and instrumentation.

Significance of the Study

This study described how senior members of the Oklahoma CAP perceive the culture of their organization. It examined whether or not there are differences in how men and women perceive this culture. The Oklahoma CAP may choose to use the information obtained by this study to develop recruiting and retention strategies that could increase senior membership in this important civic organization and address gender equity in its membership. An increase of senior membership, particularly female membership, could accomplish two valuable outcomes. First, it could give CAP a more complete range of talent. Second, it could provide strong role models for young Oklahomans, especially young girls, with whom the Oklahoma CAP routinely comes into contact as a result of its Aerospace Education and Cadet Programs missions. Both these outcomes could improve and strengthen an important civic organization and the service it provides to the state and the nation.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

Chapter two is a review of the literature related to this study. First, a historical overview of women in aviation is presented, followed by the participation of women in non-traditional careers. Next, organizational culture and the culture of the aviation field are examined. An overview of the missions and structure of the Civil Air Patrol (CAP) is presented, and female representation in CAP is investigated. Finally, research related to the Douglas Grid/Group typology, which provides the theoretical frame for this study, is discussed.

A Historical View of Women in Aviation

In order to gain perspective on how women are treated in the field of aviation and may perceive its culture, the historical literature was reviewed to document the gender discrepancies that have existed historically. The following discussion illustrates the discrepancies in aviation accomplishment between genders. A study investigating differences in men and women in relation to aviation is also discussed.

Many females from the early days of aviation could tell countless stories of discrimination. In the early years of aviation, females had to obtain the permission of their husbands or fathers before they could participate in any flight training activities (Welch, 1998, p. ix). These females faced not only ridicule, but their safety was also at risk. Male pilots cut brake lines, poured sand in gas tanks, and engaged in other "dangerous tricks" toward females that wanted to fly (Welch, 1998). Despite these hardships, great women emerged.

On October 22, 1909, almost six years after the Wright Brothers' first flight, Raymonde de Laroche from France made the first solo flight by a woman (Lebow, 2002). In the United States, Harriet Quimby took to the air and became the first American woman to earn a pilot's license on August 1, 1911. In the entire world, only 35 men and one woman (de Laroche) had preceded her in this accomplishment (Welch, 1998). Bessie Coleman overcame gender and racial barriers to become the first African American women to earn a pilot's license (Rich, 1995).

Sally Ride proved that women are not restricted to flight on the earth when she became the first American woman in space on June 18, 1983 (*Sally Ride's Biography, n.d.*), 22 years after Alan B. Shepard, Jr., became the first American in space (National Aeronautics and Space Administration, n.d.). In February, 1995, Eileen M. Collins became the first American woman to pilot the space shuttle; men had been accomplishing this since the beginning of the space program. Collins later became the first American woman to command the space shuttle in July, 1999 (National Aeronautics and Space Administration, n.d.).

Benoff (2002) asserted that even today, women in the field of aviation face unique challenges. First, many of these women in aviation careers feel a sense of "aloneness" on the job. They lack the camaraderie that comes from having coworkers of the same gender. Additionally, many of these women feel that they have to prove themselves before they can be seen as equals with males (Benoff).

Davey and Davidson (2000) found that while instances of blatant sexism in aviation have declined, "female pilots continued to encounter sexist jokes, derogatory comments about women and, on occasions, aggressive/sexist behavior from male colleagues and passengers" (p. 218). They concluded that "women had not changed the airline culture, which continued to be dominated by masculine/military values and practices, but had adapted to it" (p. 218). Their recommendations involved harassment education which addresses issues encountered by both males and females and includes sexual as well as racial harassment. Davey and Davidson concluded that the culture of aviation could only be changed if there were a greater number of women involved in the industry. Their recommendations for recruitment included putting case studies of women in aviation in recruitment literature, advertising in suitable women's magazines, and sponsoring job shadowing opportunities for young girls. They also encouraged airlines to evaluate their selection criteria for items that may inadvertently discriminate against women, such as height requirements (Davey & Davidson).

Women in Non-Traditional Careers

According to the U. S. Department of Labor (2007), a nontraditional career is any occupation in which one gender makes up twenty-five percent (25%) or less of the total

number of employees. In 2006, the U.S. Department of Labor identified careers in Aircraft Pilots and Flight Engineers, Aerospace Engineering, and Aircraft Mechanics and Service Technicians as nontraditional occupations for women. Both males and females are beginning to explore nontraditional careers. Wiberg and Harris (2001) found that females explore nontraditional jobs for higher wages, better benefits, more challenge, broader job opportunities, better possibilities for advancements, and increased job satisfaction. In contrast, benefits for males in nontraditional careers include being able to work in an area of interest, broader job opportunities, more adventure, fulfilling work, and increased job satisfaction. Barriers for males and females in nontraditional careers are similar (Wiberg & Harris). These barriers include social/cultural barriers; limited exposure and training in education; and discrimination, sexual harassment and lack of support on the job (Wiberg & Harris).

In *Workforce Education* (1998), Gray and Herr predicted that by the year 2005 the "number of white women entering the labor force will outnumber white men" (p. 34). Gray and Herr also pointed out that despite this increase of females in the labor force, females were still underpaid and either worked in "low-skill/low-wage" jobs or bumped their heads against the "glass ceiling." Wonacott (2002) concurred that females faced discrimination in the workforce and asserted that gender segregation in career and technology centers had denied females access to "the living wage that provides females the same economic self-sufficiency that males have long enjoyed" (p. 2).

Prior to the passage of Title IX, girls were restricted from taking "classes in shop, manufacturing, architectural drafting, and ceramics or to attend certain vocational schools…[and] were directed to classes where they would learn to cook and sew" (Title

IX at 30, 2002, p. 21). The *Title IX at 30: Report Card on Gender Equity* (2002) also

pointed out that while support for girls in nontraditional programs increased with the

Perkins Act in 1978 and its reauthorization in 1984, the reauthorization in 1998 actually

eliminated financial support from gender-equity programs. However, while reducing

funding for gender-equity programs, the Perkins Act of 1998 did include consideration

for "special populations," which consisted of individuals of both genders training for

nontraditional careers (PL 105-332). Thus, the Perkins Act supported females in non-

traditional roles such as aviation.

Despite legislation, males remain dominant in the field of aviation. According to

the Federal Aviation Administration, there were approximately 557,477 male pilot

certificates held, compared to only 36,808 female pilot certificates held (FAA, 2009

Table 1 & Table 2). The FAA defines pilot certificates to include student, recreational,

private, commercial, airline transport, and other miscellaneous ratings. Additionally,

according to the FAA, there were an estimated 535,263 male nonpilot certificates held,

while females only held 147,052 nonpilot certificates (FAA, 2009 Table 14 & Table 15).

The FAA classifies certificates for mechanics, repairmen, parachute riggers, ground

instructors, dispatchers, flight attendants, flight navigators and engineers as nonpilot

certificates. The majority of those nonpilot certificates held by women were Flight

Attendants (*N*=126,034) (Table 15). The data from 2009 were the most current

information available as of April, 2011. Table 2 shows the breakdown of the estimated

number of active male and female airmen certificates held both nationwide and in

Oklahoma in 2009.

Table 2

Estimated number of active male and female airman certificates in 2009

	Total Pilots Nationwide	Total Pilots Oklahoma	Total Nonpilots Nationwide	Total Nonpilots Oklahoma
Males	557,477	7,569	53,5263	14,056
Females	36,808	451	14,7052	1,090

Source: FAA aviation data statistics, 2009, Tables 1, 2, 5, 14, 15

Many solutions have been proposed to encourage individuals in nontraditional careers, including aviation (Benoff, 2002; Depperschmidt, 2008; Depperschmidt & Bliss, 2009 ; Luedtke, 1993; Report card on gender equity, 2002; Miller & Hayward, 2006; Wiberg & Harris, 2001). These sources indicate, of these solutions, career awareness programs and strong role models in nontraditional careers are two of the most widely recommended. For example, in an article on female aviation mechanics, Benoff (2002) quoted several females as identifying support received from fathers, brothers, and husbands, along with strong, active female role models as being important to increasing the numbers of females in aviation careers. In a study of Collegiate Flight Programs (Depperschmidt, 2008; Depperschmidt & Bliss, 2009), mentorship programs and employing female faculty and flight instructors are suggested as ways to promote and grow female involvement in these programs is recommended.

Organizational Culture

<u>General Concepts of Organizational Culture</u>

Hellriegel, Slocum, and Woodman (1992) defined organizational culture as a shared set of "philosophies, ideologies, values, beliefs, assumptions, expectations, attitudes, and norms" (p. 502). These researchers asserted that organizational culture exists on multiple levels, starting with the most superficial, c*ultural symbols* such as jargon or physical objects. The Civil Air Patrol has adopted many phrases and jargon from the Air Force in its operations. The use of acronyms is heavily used. *Cultural heroes* is the next level, where individuals are praised within the culture for possessing particular attributes. In the Cadet Program of the Civil Air Patrol, each Cadet achievement is tied to a cultural hero such as the Wright Brothers, Ameila Earhart, and Carl Spaatz. *Organizational rites and ceremonies* include "rites of passage, degradation, enhancement, and integration" (p. 510). With the Civil Air Patrol, rites and ceremonies play a particularly high role. Member promotions and awards are cause for celebration, and even training to work on Search and Rescue and other missions requires tests and certification. Finally, *cultural values,* makes up the deepest level of organizational culture. These values are shared beliefs or assumptions. Members all value the importance of their mission to the organization.

Hodgetts and Luthans (2003) identified six characteristics of a culture which are applicable to the culture of organizations. They proposed that culture is: (a) learned, (b) shared, (c) transgenerational, (d) symbolic, (e) patterned, and (f) adaptive. The learned nature of the Civil Air Patrol's traditions and functions is clear. Members participate in training activities to learn to function in the organization and accomplish the three

missions of the CAP (aerospace education, emergency services, and cadet programs).

One example of this is the "Level One" or introductory training new members in CAP

receive (National Headquarters Civil Air Patrol, 2011b) to learn about the background

and functions of the organization.

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individual. In CAP, members who are senior in rank (those who have traditionally been

in the organization longer) take on the roles of training new members, thus passing on

their knowledge and learning to new "generations" of members. CAP is somewhat

unique in that those members who are senior in rank are not necessarily senior in age.

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auxiliary of the U.S. Air Force, the CAP has adopted much of the symbolism and

traditions of this organization. CAP members wear military style uniforms and practice

military customs and courtesies, many of which are symbolic in nature.

The fifth characteristic of a culture is that it is *patterned* (Hodgetts & Luthans,

2003). Changes in one area, affect the whole. This patterning can be seen in numerous

ways in CAP. For example, in CAP, if there is a safety mishap in one Wing or Region, it

may cause new regulations to be implemented across the whole organization (A. S.

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Finally, cultures are *adaptive* (Hodgetts & Luthans, 2003). Throughout its more

than 60 years in existence, CAP has adapted from its early coastal patrol missions to the

three missions it has today. The CAP is continuing to adapt and take on new roles, as evidenced by CAP's involvement in homeland security and Operation Liberty Shield (National Headquarters Civil Air Patrol, 2002).

How is organizational culture changed? Schein (1992) outlined some steps leaders can take to affect culture change in an organization. He cautioned that change is difficult, and won't happen overnight. According to Schein, first and foremost, a leader must recognize and understand the old culture and then move to identifying where changes can and should be made. One of the first steps is what the leader pays attention to. If a leader attributes more importance to meeting attendance, then eventually that item will gain more importance in the organization. Deliberate role modeling, teaching, and coaching is another step suggested by Schein. Walking the walk and talking the talk can send powerful messages to an organization's members. Yet another step is tied to rewards and status. Rewarding desired behavior and promoting members who exhibit those behaviors can, over time, Schein maintained, affect organizational culture.

Culture and Aviation

Looking at data over the last 10 years, the percentage of female participation in the aviation field has remained fairly constant at about 6% (FAA, 2009). Why does this gender discrepancy exist? In a study that investigated differences between males and females as they relate to the world of aviation, Smart (1998) examined four specific areas:

- Physiological: These issues are related to how the body reacts in the flight environment. This included conditions such as hypoxia, decompression

illness, G-forces, tolerance to thermal extremes, and motion sickness and disorientation.

- Physical: This related to the overall strength and size differences between males and females, as well as different physical dimensions and bone structure.

- Medical: These were primarily gynecological issues and pregnancy concerns.

- Cultural: These were issues related to squadron bonding and morale, protective instincts, and public perceptions – especially in combat situations.

In addition to these four areas, current issues related to the Royal Australian Air Force and conclusions were provided by Smart (1998).

Smart (1998) determined that although there are various differences between males and females (specifically physical and medical issues), there is no reason these issues should prohibit all women from flying. According to Smart, physiological issues need more research to fully understand their significance; physical issues can be solved by modifying aviation and safety equipment; health issues should be addressed on a case-by-case basis; and cultural issues can probably only be overcome with time. Women are still new to the world of aviation and as Smart stated, "The very male fast jet world doesn't know quite what to do with these strange creatures" (1998, p. 14).

A study of male and female flight instructors by Ramsey and Ramsey (1996) also discussed the predominantly male culture of aviation. This study reviewed the differing values males and females bring to the field of aviation and how the culture of aviation

views those value systems. Female flight instructors were found by Ramsey and Ramsey to adopt many of the masculine traits in their instruction mainly because "success in an organization is defined by the values of the culture" (p. 55). For these females to be successful in the male dominated field of flight instruction, they had to conform to the values of the industry.

Similar findings were reported in a study by Turney, Bishop, Karp, Niemczyk, Sitler, and Green (2002). This study surveyed 195 male college aviation students and 195 female college aviation students to discover the retention rates of women in collegiate aviation. Learning styles, social acceptance, standards, faculty support, confidence, and family and career issues were all addressed by the survey. It was found that women prefer cooperative learning, need female role models, have less confidence, and have strong family concerns. Like the findings of Ramsey and Ramsey (1996), the researchers found that as women progressed in their pilot training, "they respond more like men, gain confidence and adopt more male-like attitudes" (Turney, et. al., 2002, p. 70).

In another study of collegiate flight programs, Depperschmidt (2008) concluded that the "under representation of female flight students should be a concern for collegiate flight programs" (p. 75) and that these programs should take steps to recruit females to the aviation industry. Among Depperschmidt's recommendations were to provide mentorship programs to female students and to encourage those female students to participate in educational outreach programs to inspire young women to pursue an aviation career.

<center>**Civil Air Patrol**</center>

Missions

        The Civil Air Patrol has three main missions: Aerospace Education, Emergency Services, and the Cadet Program.. The aerospace education mission of the CAP is broken down into two areas: internal and external (National Headquarters Civil Air Patrol, 2002). The internal portion of the mission focuses on the training and education of Civil Air Patrol members, while the external portion focuses on outreach programs in the community. As a part of this external mission, the Civil Air Patrol provides numerous training materials, texts, and curriculum guides. The Civil Air Patrol is also an active sponsor of the National Conference on Aviation and Space Education.

        As part of its emergency services mission, the Civil Air Patrol executes over 85% of all inland search and rescue missions for the Air Force Rescue Coordination Center (AFRCC) (National Headquarters Civil Air Patrol, 2002). In addition to search and rescue missions, CAP members participate in disaster relief and assessment for natural and manmade disasters. Since the tragedy of September 11, 2001, the Civil Air Patrol has taken a major role in homeland security and Operation Liberty Shield (National Headquarters Civil Air Patrol, 2002). Operation Liberty Shield is a national plan to help protect the United States through increased security at borders, transportation, and emergency preparedness (Department of Homeland Security, 2003).

        The CAP cadet program is dedicated to "developing young people into responsible citizens and aerospace leaders" through five main elements (National Headquarters Civil Air Patrol, 2009, p. 2). These five elements are: Leadership,

<center>25</center>

Aerospace Education, Physical Fitness, Character Development, and Activities. Youth from the ages of 12 through 21 are also able to participate in CAP's Emergency Services missions while progressing through the ranks. Cadets are able to participate in a wide range of local and national activities and are eligible for numerous academic and flight scholarships (National Headquarters Civil Air Patrol, 2011a).

Structure

The CAP is broken down nationally into eight regions: Northeast, Middle East, Southeast, Southwest, Great Lakes, North Central, Rocky Mountain, and Pacific. These regions are further broken down into Wings. Each state, the District of Columbia, and the Commonwealth of Puerto Rico make up the 52 Wings. These Wings are then broken down into groups and squadrons (National Headquarters Civil Air Patrol, 2002). In the Oklahoma Wing, there are 15 squadrons (Oklahoma Wing Civil Air Patrol, 2011). These Oklahoma squadrons and their locations are shown in Table 3.

Table 3

Names and locations of Oklahoma Civil Air Patrol Squadrons

Squadron Name	Location
Broken Arrow Composite Squadron	Broken Arrow
Cleveland County Composite Squadron	Norman
Comanche Eagle Composite Squadron	Lawton
Council Oak Senior Squadron	Claremore
Durant-Eaker Field Composite Squadron	Durant
Edmond Composite Squadron	Edmond
Enid Composite Squadron	Vance AFB (Enid)
Flying Castle Composite Squadron	Tinker AFB
Grove Composite Squadron	Grove
Jackson County Composite	Altus AFB
Muskogee Nighthawks Composite Squadron	Muskogee
Oklahoma City Composite Squadron	Oklahoma City
Riverside Composite Squadron	Oklahoma City
Starbase Composite Squadron	Tulsa
Stillwater Composite Squadron	Stillwater

Women in Civil Air Patrol

Women have been involved in the Civil Air Patrol since its inception in 1941

(CAP Historical Foundation, 2009; National Headquarters Civil Air Patrol, 2002;

Neprud, 1988; Pogorzelski, n.d.). During World War II, women took part in all of Civil

Air Patrol's wartime missions, except coastal patrols. Because of the danger of being

shot down or taken prisoner, coastal patrols were considered too dangerous (Pogorzelski,

n.d.,). This corresponds with the military's stance that women not be allowed to fly

when there was a risk of capture or injury (Chambers, 1984). By the end of the war,

women made up approximately 20% of Civil Air Patrol membership. About half of these

women went on to serve with the Women Airforce Service Pilots (CAP Historical

Foundation, 2009; Neprud, 1988).

According to Neprud (1988), women from all walks of life were welcomed into

the ranks of the newly formed Civil Air Patrol. Teachers, secretaries, college students,

telephone operators, and housewives joined with movie stars and well known pilots.

Women Airforce Service Pilots (WASP) Jackie Cochran, Nancy Harkness Love, and

Cornelia Fort were all once members. These women were all held to the same standards

as their male counterparts, and proved themselves in all areas. Commander Colonel

Earle Johnson said, "Women are just as good as men on most flying jobs – and

sometimes better" (Neprud, 1998, p. 105). Major General John F. Curry praised female

members by saying, "There must be no doubt in the minds of our gallant women fliers

that they are needed, and in my opinion, indispensable to the full success of the CAP"

(Neprud, 1988, p. 104).

Even in the early days of the organization, recruiting and training pilots,

particularly women, was a priority (Neprud, 1988). As pilot training and the Cadet

Program began to get underway in 1942, members were able to sponsor a cadet between

the ages of 15 and 17 for membership. Male members could sponsor one boy, and

female members could sponsor one girl (National Headquarters Civil Air Patrol, 2002).

Today, sponsorship is no longer required for membership.

Civil Air Patrol elected its first female National Commander, Maj. General Amy S. Courter, in August 2007 (Courter, 2008; Cox, 2008). Maj. Gen. Courter was also the first female to serve as the National Vice Commander, elected in 2006. Courter joined the organization as a cadet in the Michigan Wing in 1979, and worked her way up to serving as the Michigan Wing Commander from 1999-2002 and finally National Commander, 2007-Present (Courter, 2008; Cox, 2008).

In the July-September, 2010, *Civil Air Patrol Volunteer* magazine, Carr wrote an article which featured a record five female Wing Commanders, five out of 52 Wing Commanders. According to Carr (2010), the first women to hold the office of Wing Commander was Nancy Hopkins Tier, who served as the commander for the Connecticut Wing from 1947-1949. Often women holding this high office find themselves alone, or with only a couple female counterparts (Carr, 2010). Oklahoma has had one Female Wing Commander, Col. Virginia Keller who served in the position from 1999-2005 (V. Keller, personal communication, June 24, 2011).

The Douglas Grid/Group Typology

Through her work in cultural anthropology, Douglas (1982) created two dimensions, Grid and Group, to measure cultural relationships. *Grid* is used for the dimension of individuation and is located on the vertical axis of the Grid/Group diagram of cultural environments, while *Group* represents the social incorporation dimension and is located on the horizontal axis (Douglas, 1982). "Individuals are expected to move, or

be forced to move, across the diagram, according to choice, or according to

circumstances" (Douglas, n.d., p. 2).

The Grid dimension measures the "degree to which an individual's choices are

constrained within a social system by imposed prescriptions such as role expectations,

rules, and procedures" (Harris, 2005, p. 34). In a strong Grid environment, individuals

are highly constrained by the organization (Harris). The Group dimension "represents

the degree to which people value collective relationships and the extent to which they are

committed to the larger social unit" (Harris, p. 36). A strong Group environment seeks to

preserve the integrity of the organization above even that of the members (Harris).

Douglas (n.d.) defined the four environments as Isolate or Fatalists (strong

grid/weak group), Positional or Hierarchists (strong grid/strong group), Individualists

(weak grid/weak group), and Enclave or Egalitarians (weak grid, strong group). Isolates

have weak ties to the group; they are, as the name implies isolated. Examples of Isolates

might be prisoners or hermits (Douglas, n.d.). The Positional environment is defined by a

highly rigid and hierarchical structure which "supports tradition and order" (Douglas, p.

4). In an Individualist environment "the individual is only concerned with private

benefit" (Douglas, p. 6). Enclave environments are governed by members doing the right

thing, and depend upon the group to self-regulate and correct wrong-doers.

The Grid/Group typology has come a long way since its beginnings in cultural

anthropology. Mars and Nicod (1984) adapted the Grid/Group typology for use in the

hospitality industry and redefined the environments in terms of hotels: Craft hotels

(strong grid/weak group), Bureaucratic hotels (strong grid/strong group), Entrepreneurial

hotels (weak grid/weak group), and Traditional hotels (weak grid/strong group).

Cameron (2001) used these environments to define the culture of chefs at the Forte Crest

Hotels. He found that of the eight chefs interviewed in the study, five were placed in the

Bureaucratic (strong grid/strong group) environment. Two of the chefs, who had

achieved culinary rosettes, had obtained a degree of autonomy and fell in the

Entrepreneurial (weak grid/weak group) category. The final chef was identified as being

"in a state of partial limbo," (Cameron, 2001, pg. 111) and was in the Craft (strong

grid/weak group) category.

Giles-Sims and Lockhart (2005) applied the Grid/Group typology to families in

their study on disciplining children. In the study each of the four environments were

explained in terms of parental styles, specifically with regards to corporal punishment, in

order to help family professionals. The Egalitarian pattern (weak Grid/strong Group),

was seen as the preferential parenting culture. In this culture, there are clear family

boundaries, and "mutual affection and respect rather than ascribed status differentials"

(Giles-Sims & Lockhart, pg. 203). Corporal punishment is rarely used and Egalitarians

"focus on teaching their children to see the consequences of their actions and the need to

make amends when these consequences harm others" (pg. 204). Because corporal

punishment, as found in this study, is tied to culture, large scale regulation is ineffective.

The researchers suggested "micro-social" interventions focused on "rival beliefs and

value priorities underlying these conceptions" (pg. 211) and external support to help

individuals adopt a more positive family culture (Giles-Sims & Lockhart).

Fisher (2009) used the Douglas Grid/Group typology to look at the relationship

between tourist and host, as it related to tipping. Each of the four environments was

examined from the perspective of the server and the customer. For example, Egalitarian servers would not expect a tip, and Egalitarian customers would not be apt to leave a tip. Individualist customers "are the only ones that are likely to tip depending on the quality of the service" (Fisher, pg. 43). This information may help managers and trainers better understand their workforce and clients. By understanding the clientele, trainers can work with staff to achieve a positive outcome for all involved.

The Grid/Group framework has also been used in education research (Harris, 2005) to understand the cultures of K-12 schools and higher education. Harris defined the four types of social environments as:

1. Individualist (Weak-Grid/Weak-Group) – focus on individual opportunities and gain.

2. Bureaucratic (Strong-Grid/Weak-Group) – hierarchical environment with little individual autonomy.

3. Corporate (Strong-Grid/Strong-Group) – hierarchical environment with individuals defined by association with group.

4. Collectivist (Weak-Grid/Strong-Group) – achieving group goals and group survival is valued.

The Grid/Group dimensions and the four combination environments are shown graphically in Figure 2.

	Weak Group	Strong Group
Strong Grid	Strong Grid, Weak Group *Bureaucratic*	Strong Grid, Strong Group *Corporate*
Weak Grid	Weak Grid, Weak Group *Individualist*	Weak Grid, Strong Group *Collectivist*
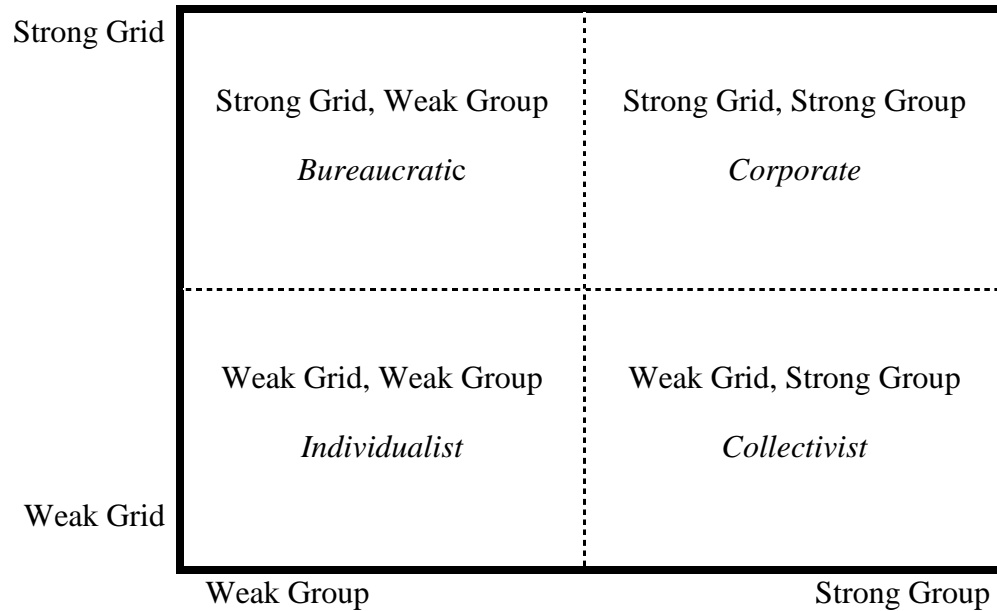
Figure 2. Grid Group Dimensions & Environments as defined by Harris (2005)

Harris (2005) used these definitions in his work on defining and improving K-12 schools. He developed an on-line survey to use for defining and describing school cultures in terms of the Douglas Grid/Group typology. By understanding the existing school culture, teachers and administrators can employ strategies based on the school culture to affect improvement in the school. In his book, *Key Strategies to Improve Schools,* Harris (2005) explained how to understand school culture using the Douglas Grid/Group typology and gave examples of school culture and leadership strategies aligned to each of the grid/group environments.

Because it most closely aligned to the organizational context of interest in the present study, this researcher selected the Harris (2005) terminology and description for the four Grid/Group environments to analyze the organizational culture of the Civil Air Patrol. Similarly, because of its appropriateness for the concepts of interest, Harris' Grid/Group instrument was also adapted for use in the present study.

CHAPTER III

METHODOLOGY

Chapter three presents the research method and procedures used in this study. The population and sample for this study are defined, the development of the survey instrument is presented, procedures used for data collection are explained, and data analysis techniques are presented.

Research Design

Survey methodology was the foundation for data collection in this descriptive quantitative study through the use of an online instrument. Survey research is the "administration of questionnaires to a sample of respondents selected from some population" (Babbie, 2007, p. 280) or to an entire population. Because this method is appropriate for descriptive studies and exploratory purposes, it was chosen for this research.

The study used descriptive statistical analysis. "Descriptive statistics provide a picture of what happened in the study" (Shavelson, 1996, p. 8). Additionally, descriptive statistics are used to describe "either the characteristics of a sample or the relationship among variables in a sample" (Babbie, 2007, p. 450) or a population. In this

study, the researcher's purpose was to provide a picture of how senior members perceive the culture of the Oklahoma Civil Air Patrol. The study also used inferential statistical analysis to test the generalizability of the sample data to the CAP population.

The analysis of the data was quantitative in nature. Quantitative data analysis involves using data which are numerical in nature (e.g., age or years of service) or assigning numbers to data (e.g., gender, where 1 equals male and 2 equals female) (Babbie, 2007).

The survey instrument for this study was a modification of the online Grid/Group survey developed by Harris (2005). Harris adapted Douglas's Grid/Group typology for use in school settings. The researcher further adapted this survey for use with the Oklahoma Civil Air Patrol. While as a whole the survey was kept the same, some of the wording had to be changed to reflect the nature of the CAP as a non-profit organization. For example: the word "teachers" was changed to "members" and the word "administrators" was changed to "commanders."

Population and Sample

For this study, population was defined as "the total of all persons about whom information is desired" (Sax, 1997, p. 510). The planned population for this study was senior members of the Oklahoma CAP. All senior members with available email addresses in the Oklahoma CAP were invited to participate. As of August 2010, there were 398 senior members in the Oklahoma Wing; 21% of members were female. Figure 3 shows the gender breakdown of all Oklahoma CAP members.
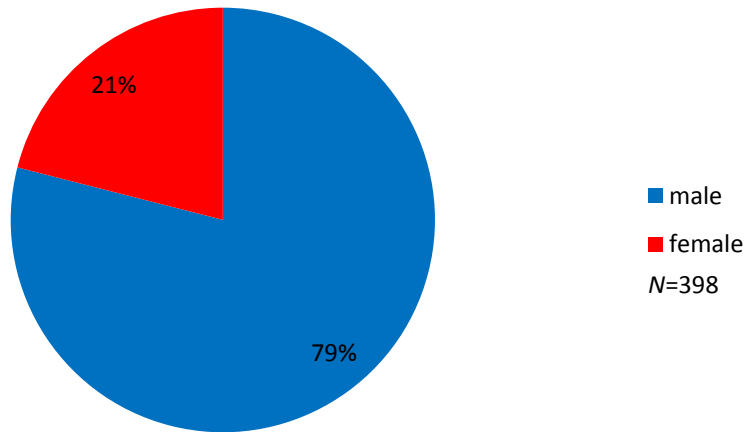
Figure 3. Gender breakdown of all Oklahoma CAP senior members as of August, 2010.

Of the 398 Oklahoma CAP senior members, 351 members had a valid email addresses on file with the organization. This created an available population of 351 members (88.2%). Invitations to participate in the study and complete the survey were sent to all 351 members with an email address on file. Eighteen percent (18%) of those senior members with valid email addresses on file were female. Figure 4 shows the breakdown of senior members who were invited by email to participate in this study by gender.
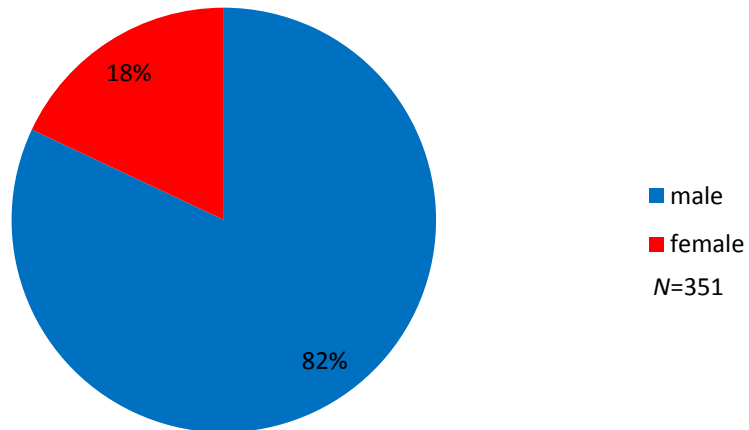
Figure 4. Gender breakdown of Oklahoma CAP senior members with a valid email address as of August, 2010.

For this study, a sample was "defined as a limited number of individuals selected from the population" (Sax, 1997, p. 510). The obtained sample from the available population was all senior members who voluntarily completed and submitted the study's survey. A total of eighty-five (85) senior members chose to complete and submit the survey. This resulted in a 24% response rate for the available population. Of those eighty-five (85) senior members, there were 15 female respondents and 70 male respondents. Figure 5 shows the breakdown of respondents by gender. These percentages were identical to the gender percentages in the available population, indicating that the sample was representative of the available population in gender composition.
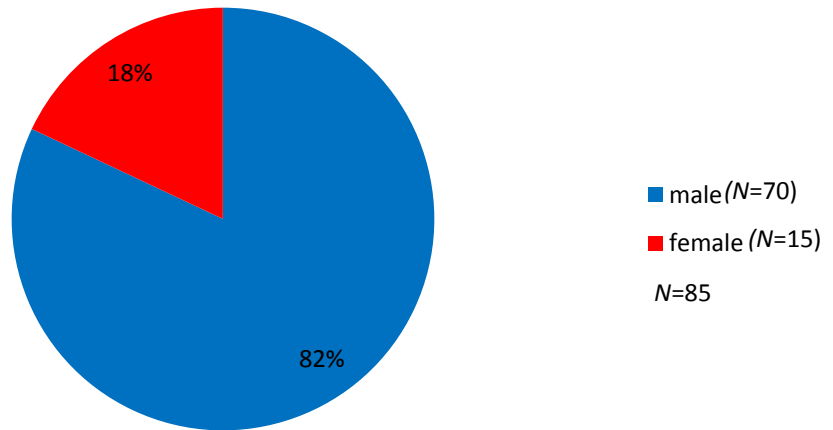
Figure 5. Gender breakdown of survey respondents.

To further describe the sample, in addition to gender, study participants were asked to report their primary role in CAP and their years of service. The majority of the respondents (39%) indicated they had been members of the organization five years or less. Figure 6 shows the years of service of the respondents broken down by gender.
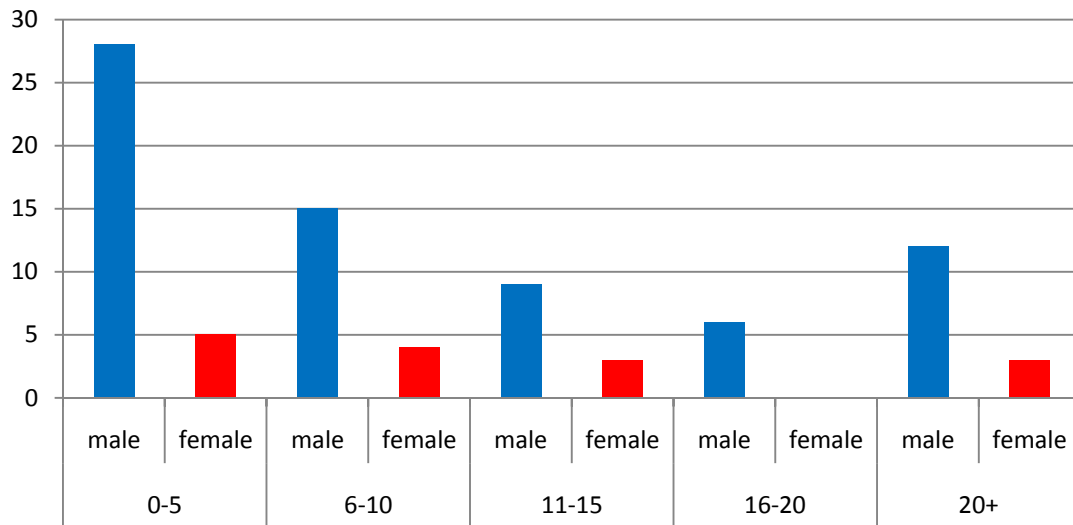
Figure 6. Years of service in CAP by gender of respondents.

The various positions in CAP were grouped into seven (7) categories. These categories, along with examples of their corresponding CAP positions, are found in Table 4. Figure 7 shows the breakdown of these roles by gender. As shown in Figure 7, male respondents tended to be more involved with Operations or Command functions, while female respondents were more likely to be involved in Command Support or Cadet Programs functions.

Table 4

Primary Roles in Civil Air Patrol with Example Position Titles

Primary Role	Possible Position Titles
Command	Commander, Deputy Commander for Seniors, Deputy Commander for Cadets, Chief of Staff
Command Support	Administration, Finance, Historian, Inspector General, Personnel, Public Affairs, Recruiting, Safety
Professional	Chaplin, Legal, Medical (requires civilian credential)
Senior Programs	Professional Development, Plans, Programs
Cadet Programs	Activities, Drug Demand Reduction, Leadership, Moral Leadership, Testing
Operations	Communication, Emergency Services, Logistics, Pilot, Standardization/Evaluation
Aerospace	Aerospace Education, Director of Aerospace, External Aerospace, Internal Aerospace
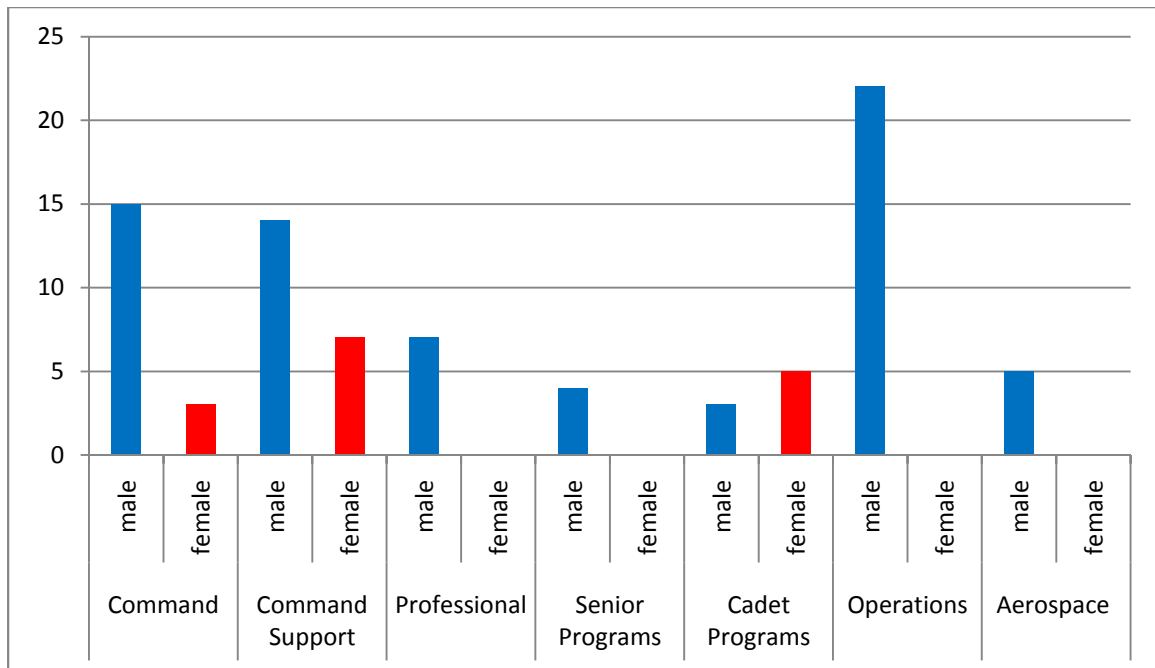
Figure 7. Primary roles by gender of respondents.

Instrumentation

An on-line survey was the means of data collection for this study. This survey included items related to primary role in CAP, years of service, gender, and Douglas Grid/Group items. The demographic items were used to describe the obtained sample of the Oklahoma CAP senior member population. The Grid/Group items were used to describe the organization's culture as perceived by the volunteer sample of its senior members.

The Grid/Group instrument for this study was adapted from the instrument used by Harris (2005) in his work with public schools. Permission was obtained from Dr. Harris to adapt this instrument for use in this study. An electronic copy of Harris's online survey instrument was obtained and edited to reflect the context of this study. The online

instrument was adapted for use with the Civil Air Patrol by changing the terminology to reflect the nature of the CAP organization; for example, the word "teacher" was changed to "member". The amended instrument was approved by Dr. Harris before being placed online. A copy of this instrument is available in Appendix D.

Because this study was based on the Douglas Grid/Group typology, the survey responses were plotted using the Grid/Group chart. In the Grid/Group model, two dimensions are identified for describing cultural relationships. *Grid* is used for the dimension of individuation, while *Group* represents the social incorporation dimension (Douglas, 1982). Aligned along these two dimensions are four types of social environments (Douglas, 1982). These four environments were described by Harris (2005) as follows:

1. Individualist (Weak-Grid/Weak-Group) – focus on individual opportunities and gain.
2. Bureaucratic (Strong-Grid/Weak-Group) – hierarchical environment with little individual autonomy.
3. Corporate (Strong-Grid/Strong-Group) – hierarchical environment with individuals defined by association with group.
4. Collectivist (Weak-Grid/Strong-Group) – achieving group goals and group survival is valued.

The Grid/Group dimensions and the four combination environments are shown graphically in Figure 8.
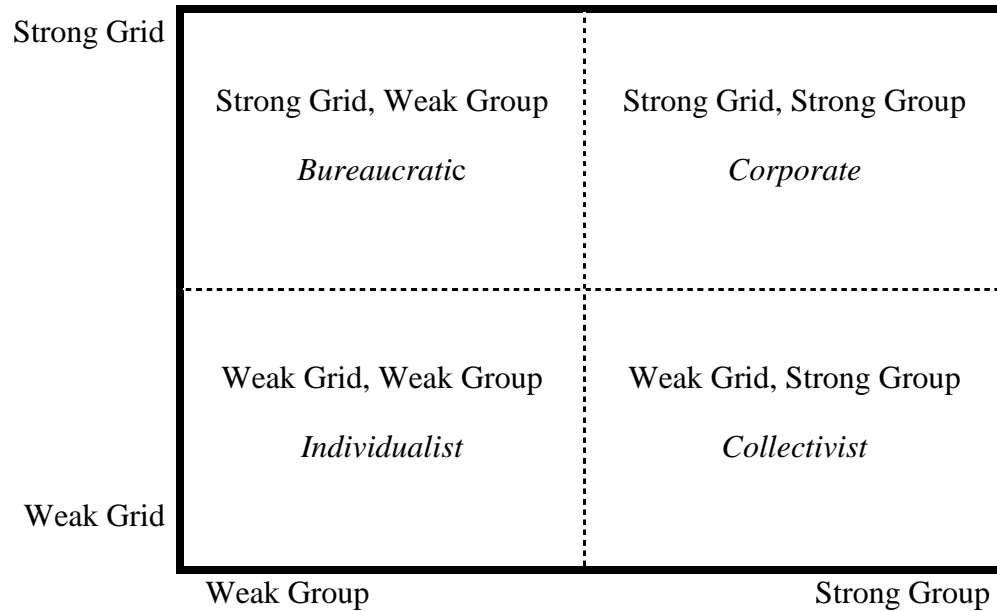
Figure 8. Grid Group Dimensions & Environments as defined by Harris (2005)

The Grid/Group Survey instrument consisted of a total of 24 Likert-scale-type items. The first 12 items measured the Grid dimension while the last 12 measured the Group dimension. Subjects indicated their responses based on how they viewed the organization on a continuum ranging from 1-8. Because the survey was online, the subjects indicated their responses by clicking on the button which best indicated their response on the continuum. If a subject failed to answer an item, an error screen came up to inform the subject of the missing information and tell him/her how to fix the mistake. In addition to the Grid/Group items, demographic questions were also included on the instrument. Members were asked to report their gender, primary role in CAP, and total years of service in CAP.

Once the survey was completed and submitted, the data went into a data file on the Oklahoma State University server. These data were imported into Microsoft Excel 2010. For each participant, the Grid items were added together and divided by 12 to

obtain a mean Grid score for each respondent. The Group items for each participant were also added together and divided by 12 to obtain a mean Group score for each respondent. These mean Grid and Group scores were plotted on the Grid/Group graph to determine how the Oklahoma CAP members viewed the culture of the organization.

Procedures

Approval to conduct the study was obtained from Oklahoma State University IRB (Appendix A) and from the Oklahoma CAP (Appendix B). Using the Wing email roster, each senior member in the Oklahoma CAP with an email address on file received an email invitation to complete the on-line survey (Appendix C). Permission to survey the Oklahoma Civil Air Patrol Membership was obtained from the then-Vice Wing Commander, Lt. Col. Joe Cavett. A copy of this permission letter can be found in Appendix B. Lt. Col. Cavett was promoted to the rank of Col., and took over as commander for the Oklahoma Wing in April of 2011. The invitation email contained the informed consent document as well as a link to the survey located on the Oklahoma State University server. A copy of the invitation letter is located in Appendix C. Members read the consent information and followed the link to complete the survey if they were willing to participate. The start page for the survey reminded participants that their participation was completely voluntary, and participants had to once again consent to participate in order to open and complete the survey. Once the survey was completed, the member submitted it electronically. A confirmation page was displayed to let the member know the survey was successfully completed. If a member failed to answer an item, a prompt appeared letting him/her know the survey was incomplete and telling him/her how to go back and respond appropriately. Copies of the survey homepage,

online survey, confirmation page and incomplete survey prompt are included in Appendix D. Once the survey was submitted, the data were put into a file on the Oklahoma State University server. There was no way to connect any individual data to the senior member who submitted the information, which preserved the anonymity of the participants. To help increase the rate of participation, a follow-up email was sent out one week after the initial request as recommended by Dillman (1978). A copy of the follow-up letter can be found in Appendix E.

Statistical Analysis

To better understand the perceived culture of the Oklahoma Civil Air Patrol, and how male and female members viewed this culture, two research questions were identified for this study:

1. What is the perceived culture of the Oklahoma CAP by its senior members, as defined by Douglas' Grid/Group Framework?
2. What differences exist in how male and female senior members of the Oklahoma Wing CAP perceive the organization's culture?

In order to address the second research question, the following research hypotheses were tested. The hypotheses were tested at $\alpha=0.05$ level.

H_{01}: There is no difference in how male and female senior member of the Oklahoma Wing CAP perceived the organization's culture on the Grid dimension.

H_{A1}: There is a difference in how male and female senior member of the Oklahoma Wing CAP perceived the organization's culture on the Grid dimension.

H_{02}: There is no difference in how male and female senior member of the Oklahoma Wing CAP perceived the organization's culture on the Group dimension.

H_{A2}: There is a difference in how male and female senior member of the Oklahoma Wing CAP perceived the organization's culture on the Group dimension.

The research questions were addressed using quantitative data gained from the on-line research survey. Grid/Group items were mapped according to procedures recommended by Harris (2005). For each participant, the 12 Grid items were added together and divided by 12 to obtain a mean Grid score. This was also done for the 12 Group items. These mean scores were plotted on the Grid/Group plot. This created a graphic representation of how the study participants viewed the culture of the CAP on the Grid/Group quadrants.

To determine if there were statistical differences in how male and female members perceive the CAP organizational culture, the data were analyzed using independent sample t-tests. PASW Statistical Analysis Software version 17 for Windows was used to calculate the t-tests. For the purpose of this study, a significance level of 5% ($\alpha = .05$) was used. Levene's tests for homogeneity of variance were used to determine if pooled or unpooled variance estimates should be used in the t-tests. Table 5 summarizes how each research question was addressed statistically.

Table 5

Research Questions, Data Sources, and Analysis Techniques for the study

Research Question	Data Source	Data Analysis Technique
1. What is the perceived culture of the Oklahoma CAP by its senior members, as defined by Douglas' Grid/Group Framework?	on-line Grid/Group instrument	plotting on Grid/Group diagram and description by Grid/Group Environment
2. What differences exist in how male and female senior members of the Oklahoma Wing CAP perceive the organization's culture?	on-line Grid/Group instrument	t-tests to compare male/female responses on Likert-type scales

CHAPTER IV

FINDINGS

Introduction

This study described how the senior members of the Oklahoma Civil Air Patrol

(CAP) perceived the organization's culture in the context of Douglas' Grid/Group

Typology. This study also investigated whether male and female members of the

Oklahoma CAP viewed the organization's culture differently. Senior members of the

Oklahoma CAP were recruited via email and asked to complete an online Grid/Group

survey. The obtained sample comprised 85 senior members: 15 (18%) females and 70

(82%) males. The gender distribution in the obtained sample matched that of the

available population. This chapter presents the findings of this survey.

Research Question 1: What is the perceived culture of the Oklahoma CAP by its

senior members as defined by Douglas' Grid/Group Framework?

To answer this research question, members' survey responses were plotted on

Grid/Group graph. For each respondent there were 12 Grid items and 12 Group items.

All items were eight-point Likert-type scales. The responses from the 12 Grid items were

added together and divided by 12 to obtain a mean Grid score for each respondent. Total

overall means for the entire sample (*N*=85) and standard deviations were also calculated

for each of the 12 Grid and 12 Group scores. These sample means and standard

deviations are shown in Table 6 (Grid scores) and Table 7 (Group Scores). The mean

Grid and Group scores for each respondent were plotted on the Grid/Group graph. This

graph is shown in Figure 9. The red plots on the graph represent female respondents, and

the blue plots represent male respondents.
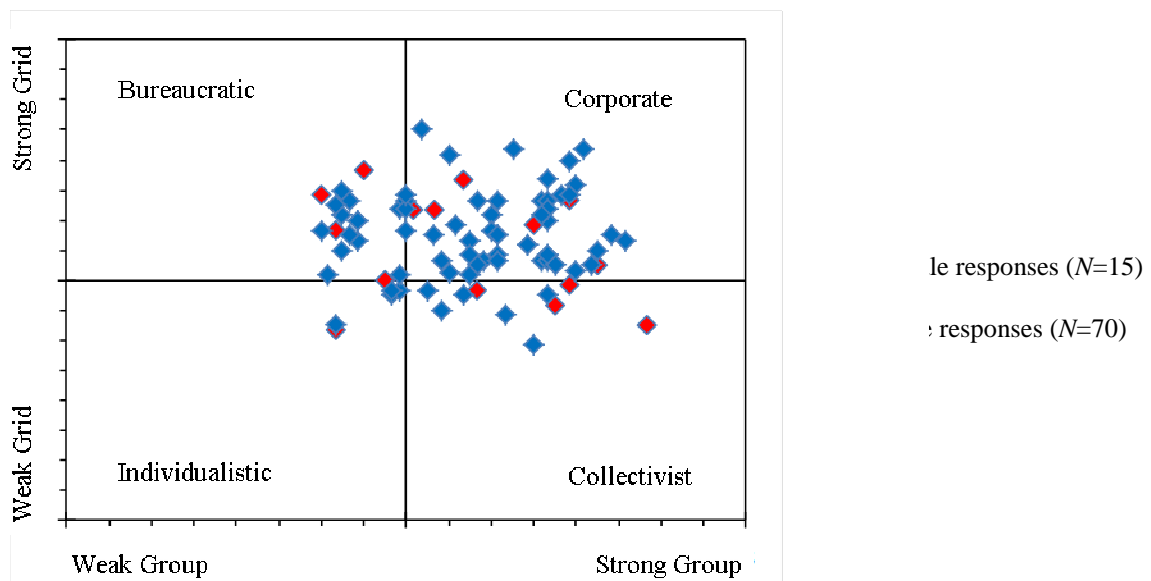
Figure 9. Grid/Group mean scores of Oklahoma CAP Senior Members

Oklahoma CAP members viewed the organization as being Strong Grid/Strong

Group. Harris (2005) defined this context as *corporate*, a hierarchical setting where

individuals are defined by their membership in the organization and their association with

the group. This seems to fit with the importance placed on rank and position. Individuals

in the Strong Grid/Strong Group environment may be very different, but are strongly

bound to the success of the organization (Straker, 2009). Members in CAP are volunteers, strongly committed to their organization, and defined by their rank, position, and proficiencies.

The second strongest view of the CAP was as a *bureaucratic* organization. This is a Strong Grid/Weak Group, hierarchical environment with little individual autonomy (Harris, 2005). This may reflect the strong military overtones of the CAP.

Research Question 2: What differences exist in how male and female senior members of the Oklahoma CAP perceive the organization's culture?

To address this research question, the following null research hypotheses were tested. The hypotheses were tested at α=0.05 level.

H_{01}: There is no difference in how male and female senior member of the Oklahoma Wing CAP perceived the organization's culture on the Grid dimension.

H_{02}: There is no difference in how male and female senior member of the Oklahoma Wing CAP perceived the organization's culture on the Group dimension.

For each Grid/Group item, an independent sample t-test was performed as the test of significance to determine if there were statistically significant differences in the ways male and female members of the Oklahoma CAP perceived the organization. Independent sample t-tests were also performed on the mean Grid and the mean Group responses for males and females used on the Grid/Group plot. Levene's tests for homogeneity of variances were performed on each item and on the Grid and Group mean scores to determine whether pooled or unpooled variances should be used for the t-tests. For all t-tests, an alpha level of 0.05 was used ($\alpha \leq 0.05$) to reflect the null hypothesis.

Table 6 shows the descriptive statistics and independent sample t-test results for gender on the Grid dimension. Pooled variance estimates were used on item Grid 4 bexause the Levene's test for homogeneity of variance was significant (F=5.704; df=.019; α=0.05). For all other items, the Levene's test was not significant and unpooled variances were used. There were no significant differences on any of the individual Grid items or on the Grid mean for genders.

Table 6

t-test: Descriptive statistics and gender t-test results for the 12 Grid items and the grid mean score (*N=85*)

Item		N	M	SD	t	df	Sig. (2-tailed)
Grid Mean					-.784	83	.435
	Female	15	4.5560	.88981			
	Male	70	4.7240	.72234			
Grid Item 1: Authority structures are decentralized/centralized					-1.498	83	.138
	Female	15	5.53	1.922			
	Male	70	6.20	1.480			
Grid Item 2: Job responsibilities are ill defined/well defined					-1.554	83	.124
	Female	15	4.53	1.995			
	Male	70	5.37	1.874			
Grid Item 3: Individual members have full/no autonomy in educational material selection					1.765	83	.081
	Female	15	5.07	1.534			
	Male	70	4.23	1.695			
Grid Item 4: Individual members have full/no autonomy in generating their educational goals					.993*	17.192*	.335*
	Female	15	3.73	2.187			
	Male	70	3.14	1.563			
Grid Item 5: Individual members have full/no autonomy in choosing instructional methods/strategies					-.518	83	.606
	Female	15	3.80	2.274			
	Male	70	4.09	1.863			

Grid Item 6: Members are encouraged/discouraged to participate/take ownership of their education				.452	83	.653
	Female	15	2.73	1.486		
	Male	70	2.54	1.481		
Grid Item 7: Members obtain instructional resources through individual negotiation/ administrative allocation				-.253	83	.801
	Female	15	4.20	1.656		
	Male	70	4.33	1.808		
Grid Item 8: Instruction is personalized/not personalized for each member				-.747	83	.457
	Female	15	5.40	1.882		
	Male	70	5.79	1.801		
Grid Item 9: Individual members are motivated by Intrinsic, self-defined interests/Extrinsic, institutional rewards.				-.973	83	.333
	Female	15	2.87	1.642		
	Male	70	3.33	1.674		
Grid Item 10: Hiring decisions are made with/without member input.				-1.593	83	.115
	Female	15	4.73	2.374		
	Male	70	5.61	1.844		
Grid Item 11: Training schedules are determined with/without member input.				.080	83	.936
	Female	15	4.93	2.344		
	Male	70	4.89	2.040		
Grid Item 12: Rules and procedures are few/numerous				-.325	83	.746
	Female	15	7.13	.743		
	Male	70	7.23	1.079		

*Levene's test significant; equal variance not assumed; pooled variance estimates used

The t-tests reported in Table 6 failed to reject null hypothesis 1. No significant

differences were found for males and females on the Grid dimension, either on individual

Grid items or the Grid means for gender.

Table 7 shows the independent sample t-test results for gender on the Group

dimension.   Pooled variances were used on all Group items because all Levene's tests

for homogeneity of variance were not significant. There were no significant differences

in male and female responses on the Group gender means, or most of the Group items.

However, Group Item 8 did have a significant difference (α=.039) between male and

female responses. Group Item 8 was:

20. Communication flows primarily through:

Individual, informal
networks   1   2   3   4   5   6   7   8   Corporate, formal
networks

Female members tended to indicate that communication flowed through individual,

informal networks. Males felt that communication flowed through corporate, formal

networks.

Table 7

Descriptive statistics and gender t-test results for the 12 Group items and the Group mean score (*N*=85)

Item		N	M	SD	t	df	Sig. (2-tailed)
Group Mean					-.222	83	.825
	Female	15	4.7113	1.25670			
	Male	70	4.7763	.97586			
Group Item 1: Chain of command is Individual members working alone/ All members working collaboratively					-1.122	83	.265
	Female	15	4.60	1.957			
	Male	70	5.16	1.699			
Group Item 2: Members' socialization and work are Separate, dichotomous activities/ Incorporated/united activities					.497	83	.621
	Female	15	5.00	2.070			
	Male	70	4.76	1.637			
Group Item 3: Extrinsic rewards primarily benefit the individual/everyone in the organization					-.403	83	.688
	Female	15	4.40	1.805			
	Male	70	4.60	1.731			
Group Item 4: Teaching and learning are planned/organized around Individual/group goals and interests					.599	83	.551
	Female	15	5.60	2.063			
	Male	70	5.29	1.795			
Group Item 5: Performance is evaluated according to Individual/group goals, priorities, and criteria					.888	83	.377
	Female	15	5.13	1.685			
	Male	70	4.67	1.855			

		N	Mean	SD	t	df	Sig.
Group Item 6: Members work In isolation/collaboratively toward goals and objectives					-.552	83	.582
	Female	15	4.20	2.007			
	Male	70	4.47	1.666			
Group Item 7: Unit goals are generated Individually by Commanders/ Collaboratively by all members					1.365	83	.176
	Female	15	4.60	1.502			
	Male	70	3.89	1.900			
Group Item 8: Communication flows primarily through Individual, informal networks/ Corporate, formal networks					-2.100	83	.039 [sh]
	Female	15	3.53	1.807			
	Male	70	4.66	1.895			
Group Item 9: Instructional resources are controlled or owned individually/collaboratively					-.412	83	.681
	Female	15	4.80	1.781			
	Male	70	5.01	1.838			
Group Item 10: People hold No/Much allegiance or loyalty to the organization					1.632	83	.107
	Female	15	6.47	1.552			
	Male	70	5.71	1.634			
Group Item 11: Responsibilities of members and commanders are Ambiguous, fragmented with no accountability/ Clear/communal with much accountability					-1.071	83	.287
	Female	15	4.67	2.289			
	Male	70	5.27	1.918			
Group Item 12: Most decisions are made Privately by factions or independent verdict/ Corporately by consensus or group approval					-.534	83	.595
	Female	15	3.53	1.995			
	Male	70	3.84	2.048			

[s] Significant at $\alpha \leq .05$

The t-tests reported in Table 7 resulted in the rejection of null hypothesis 2. Males and females were significantly different in their perception of the communication environment of the Oklahoma CAP.

CHAPTER V

CONCLUSION

This study described how senior members of the Oklahoma Civil Air Patrol (CAP) perceived the culture of their organization using the conceptualization of cultural environments identified in the Douglas Grid/Group typology. This study also examined whether male and female members of the (CAP) perceived the culture differently. The following research questions guided the study:

1. What is the perceived culture of the Oklahoma CAP by its senior members, as defined by Douglas' Grid/Group Framework?

2. What differences exist in how male and female senior members of the Oklahoma Wing CAP perceive the organization's culture?

Summary of the Study

In order to address the research questions, an online version of the Grid/Group instrument developed by Harris (2005) was adapted for use with the Oklahoma Civil Air Patrol. Permission was obtained from Harris to adapt his instrument for use with the Civil Air Patrol. The instrument contained 12 Grid items and 12 Group items, along with some basic demographic information (gender, years of service, role in organization). The

Grid/Group items were Likert-scale type questions with answers on a continuum from 1-8.

Members were invited to voluntarily participate via an email which contained a link to the Grid/Group survey. Invitations were sent to all 351 Oklahoma CAP senior members with an email address on file. Eighteen percent (18%) of those senior members with valid email addresses on file were female. A total of eighty-five (85) senior members chose to complete and submit the survey, for a 24% response rate. Of those eighty-five (85) senior members, eighteen percent 18% were female.

Data were analyzed using graphic plotting and descriptive and inferential statistical analyses. Data from the Grid/Group survey instrument were plotted on the two-axis diagram of the Grid/Group dimensions as defined by Harris (2005). The data were also entered into an SPSS/PASW data file and analyzed using SPSS/PASW Statistical Analysis Software version 17 for Windows. Both Grid and Group total means and the means on individual items on the Grid/Group assessment were compared using independent sample t-test to determine the overall sample perception of the CAP organizational climate and whether there was a difference between male and female responses.

Summary of Findings

Research Question 1: What is the perceived culture of the Oklahoma CAP by its senior members, as defined by Douglas' Grid/Group Framework?

Oklahoma CAP members viewed the organization as being Strong Grid/Strong Group. Harris (2005) defined this context as *corporate*, a hierarchical setting where

individuals are defined by their membership in the organization. The second strongest view of the CAP was as a *bureaucratic* organization. This is a Strong Grid/Weak Group, hierarchical environment with little individual autonomy (Harris, 2005). Male and female responses were similar in these top two perceptions.

Research Question 2: What differences exist in how male and female senior members of the Oklahoma CAP perceive the organization's culture?

On 23 out of 24 items, there was no significant difference in how male and female members of the Oklahoma CAP perceived the organization's culture. The only area where males and females showed a significant difference was with respect to the flow of communication in the organization. Female members tended to indicate that communication flowed through individual, informal networks, while males felt that communication flowed through corporate, formal networks

Conclusions and Discussion

Several conclusions can be drawn from these findings.

Conclusion 1

The organizational culture of the Oklahoma CAP is perceived by its senior members as Strong Grid. The Grid dimension defines how similar individual members are. In a Strong Grid environment, members are very different and highly specialized. This seems to fit with the strong military overtones in the organization and the importance placed on rank and position. Members in CAP are volunteers who come from all types of backgrounds and bring different knowledgebases and experiences to the

organization. Within the organization, members are defined by their rank, position, and proficiencies. Males and females both expressed their perception of the organization as Strong Grid.

Conclusion 2

There is some disagreement regarding whether the Strong Grid culture of the Oklahoma CAP is Strong Group or Weak Group. The Group dimension measures how "connected" members of the organization are. With a Strong Group, members are highly connected and dependent on one another for success. Members in CAP are volunteers, strongly committed to their organization. With the Oklahoma CAP, members rely on each other for success. This is especially evident in the Emergency Services mission of CAP. In this mission, members work together on real-world search and rescue operations. Ground Teams and Air Crews work together to search for missing aircraft or individuals. Their efforts are coordinated by a Mission Staff. Each member is dependent on one another for the mission to be successful.

With a Weak Group environment, members do not feel connected to the organization. These members may not see how their specialties fit with the success of the organization. Straker (2009) defined weak group as consisting of "distinct and separated individuals, perhaps with common reason to be together though with less of a sense of unity and connection" (para. 1). Within CAP, members tend to be highly specialized, and through their common interests they are bound together.

Members may have differed on their Group perception based on how connected they feel with the organization. Strong Group environments are more closely connected

than Weak Group. Differences may be due to the different roles members play in the organization, or the length of time a member has been involved in CAP. Newer members may feel more isolated than members who have been in a long time and who have established friendships within the organization. Males and females were similar in this perception.

Conclusion 3

Overall, males and females perceive the organizational culture of the Oklahoma CAP very similarly. While surprising, this conclusion was not completely unexpected. Research on women in aviation has suggested that females adapted masculine traits to be successful within the male dominated culture of aviation (Ramsey & Ramsey, 1996; Turney, et. al., 2002). It may be that female senior members have also adapted to the male dominated culture of the Oklahoma CAP. Female members who choose not to adapt to this environment choose not to be involved in the organization.

Conclusions 4

Males and females differ in the way they perceive communication occurring in the Oklahoma CAP. Female members tended to indicate that communication flowed through individual, informal networks. Males felt that communication flowed through corporate, formal networks. It may be that female members felt communication flowed through informal "boy's clubs" because they feel left out of decision making processes.

<u>**Conclusion 5**</u>

Factors that may cause lower female participation in the Oklahoma CAP appear to be outside the elements identified in the Grid/Group organizational cultural typology. As a whole, there was no significant difference in how male and female members of the Oklahoma CAP perceived the organization's culture. This may be due to the fact that the female members who have chosen to stay involved in the organization have adapted to the existing culture of the Oklahoma CAP (Ramsey & Ramsey, 1996; Turney, et. al., 2002). Therefore, while the culture of the Oklahoma CAP may be prohibiting female membership, additional research with members who have chosen to leave the organization will be needed.

Recommendations for Further Research

Several recommendations for further research are drawn from this study's findings and conclusions.

1. Further research should be conducted to determine if members who leave the Oklahoma CAP perceive the culture differently from members still involved in the organization.

2. Further research should be conducted to determine why *flow of communication* was perceived to be different in the Oklahoma CAP by males and females. Are their specific characteristics and behaviors in the organization that cause this gender difference?

3. Further research should be conducted to see if <u>age</u> (which was not a variable in this study) affects culture perception among senior members?

4. Further research should be conducted to see if cadet members view the culture differently than senior members?

5. Further research should be conducted to determine the Grid/Group preference of members. Is there a gap between the perceived culture of CAP and members preferred culture? If so, how could CAP bridge that gap?

6. There is still a question as to why female membership in the Oklahoma CAP is so low. Additional studies should be conducted to determine why this is the case. The reasons appear to be outside the organizational culture characteristic inherent in the Grid/Group typology and therefore were not determined by this study. Additional review of the literature related to gender differences in culture and behavior characteristics of other organizations may be useful in conceptualizing such further research. Qualitative interviews with current members, as well as those members who have left the organization, may also provide helpful insight into providing an explanation.

7. Further research using CAP populations beyond Oklahoma should be conducted to determine if the perception patterns identified in this study are limited to this state or are characteristic of wider groups within the national CAP context.

8. Complete an item analysis of the Grid/Group instrument to examine the internal validity.

Significance of the Study

This study was significant in three areas: addition to literature, expansion of theory, and practice. This study added to the body of literature by providing a first step in understanding the culture of the Civil Air Patrol. Until this study was conducted, there was no research into the culture of this organization. This study also added to the literature on the culture of aviation by providing a look at volunteer participation in aviation. The majority of aviation culture studies focused on the professional field of aviation, the Civil Air Patrol is an all-volunteer organization with a strong aviation influence.

This study has also served to expand the Grid/Group theory into previously unexplored areas. Grid/Group was used to define a volunteer organization, something this theory has not been used for in the past. Volunteer organizations are unique in the sense that members are drawn together because of similar interests, not geography or work constraints. In this study, Grid/Group was also used to define the culture of a para-military organization. In addition to the volunteer nature of the organization, there is also a strong military influence since CAP is the Official Auxiliary of the U.S. Air Force. Cultural theory also benefits from the volunteer aspect study. Many cultural studies focused on industry culture or geographic culture. The members of this culture are volunteers.

For the Oklahoma Civil Air Patrol, this study helps members and leaders better understand the culture of the organization. Using this information can help the organization to develop a mentorship program to aid in the recruitment and retention of

members, especially female members. Growing and retaining its membership base would give the organization a more complete range of talent and provide strong role models for the young people the CAP routinely comes into contact.

Conclusion

The Civil Air Patrol is a national civic organization founded in 1941, yet relatively no research has been conducted regarding the culture or membership of the organization. Women have been involved in the CAP from the beginning; however, in Oklahoma, females are still underrepresented (20% of membership). This study provided a view of the Oklahoma CAP's culture through the lens of the Douglas Grid/Group typology.

While there was no significant difference in how males and females perceived the culture of the Oklahoma CAP, it is meaningful that the culture, as viewed by its members, has been defined as a Strong Grid/Strong Group environment. Schein (1996) identified that the first step in changing culture is to have an understanding of the existing culture. This study provides the first step in gaining an understanding of the culture of the Oklahoma CAP and identifying where changes should be made. Further research can help the organization better identify why there is low female involvement.

Developing a mentorship program may help orientate new members to the organization, and encourage and retain female involvement (Depperschmidt, 2008). Aerospace is one of largest industries in the State of Oklahoma, employing approximately 143,000 individuals with an output of $11.7 billion annually (Oklahoma Department of Commerce, 2011). CAP can and should play a strong role in promoting

and growing this industry. Increasing female participation will strengthen the

organization, encourage youth (especially young girls) to pursue STEM careers, and

promote the aerospace industry.

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APPPENDICES

APPENDIX A

IRB APPROVAL LETTER

Oklahoma State University Institutional Review Board

Date:	Wednesday, March 02, 2011
IRB Application No	ED1149
Proposal Title:	A Grid/Group Study of Gender Perceptions of the Culture of the Oklahoma Civil Air Patrol
Reviewed and Processed as:	Exempt

Status Recommended by Reviewer(s): Approved   Protocol Expires: 3/1/2012

Principal
Investigator(s):

Kelly Wardlaw   Lynna Ausburn
102 E. Marie Dr.   257 Willard
Stillwater, OK 74075   Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.
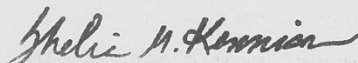
The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 219 Cordell North (phone: 405-744-5700, beth.mcternan@okstate.edu).

Sincerely,

Shelia M. Kennison

Shelia Kennison, Chair
Institutional Review Board

APPENDIX B

OKLAHOMA CAP PERMISSION LETTER

HEADQUARTERS, OKLAHOMA WING
CIVIL AIR PATROL
UNITED STATES AIR FORCE AUXILIARY
3800 A Avenue, Room 303, Mail Stop L-39
TINKER AIR FORCE BASE, OKLAHOMA
Phone: 405-736-6044/Email: okwinghq@yahoo.com

2 February 2011

To Whom it May Concern,

Kelly Wardlaw has permission from the Oklahoma Wing to survey its membership for her dissertation study titled: A Grid/Group Study of Gender Perceptions of the Culture of the Oklahoma Civil Air Patrol, pending approval from Oklahoma State University's Institutional Review Board.

We will work with Kelly to provide her with email addresses for our membership which she can use to request member participation.

If you have any questions, please feel free to contact me at the number below.

Sincerely,

Joe Cavett, LtCol, CAP
Vice Wing Commander
(918)513-2943

APPENDIX C

INVITATION EMAIL

Dear Fellow CAP Member,

My name is Maj. Kelly Wardlaw (Stillwater Composite Squadron), and I am a Ph.D. student in Occupational Education at Oklahoma State University. I am writing to request your assistance in my dissertation study titled: A Grid/Group Study of Gender Perceptions of the Culture of the Oklahoma Civil Air Patrol. This study will describe how senior members of the Oklahoma CAP perceive the culture of the organization. It will examine whether or not there are differences in how men and women perceive this culture. This information may be used to develop recruiting and retention strategies that could increase senior membership in this organization. This increase of senior membership, particularly female membership, could accomplish two valuable outcomes. First, it could give CAP a more complete range of talent. Second, it could provide strong role models for young Oklahomans, especially young girls, with whom the Oklahoma CAP routinely comes into contact as a result of its Aerospace Education and Cadet Programs missions. Both these outcomes could improve and strengthen an important civic organization and the service it provides to the state and the nation.

The survey will take about fifteen minutes (15 minutes) to complete. Your participation is completely voluntary, all responses you return will be completely anonymous, and there will be no way to identify your individual responses. All data from my study will be maintained personally by me on a password protected computer in a locked cabinet at my personal residence, and no one but me will have access to the data. Data will be kept for no longer than one year.

Your responses will go directly to a secure server at Oklahoma State University. All responses reported in my study will be in aggregate statistics or as completely anonymous individual pieces of data. There will be no way for anyone to identify you as an individual or to link your responses to you personally.

Your response is important because it represents your opinions and perspectives as a member of this community and can help the future development of the Oklahoma CAP.

Click the link below to start the research survey. **By clicking on the link and then by completing and submitting the survey, you agree that you understand the information in this email and are giving your consent to participate and to have your responses included in the report of this research.** Make sure to read and answer each question carefully, and click the "submit" button at the bottom of the survey when you are finished. Please complete the survey by **April 1, 2011.**

http://frontpage.okstate.edu/coe/wardlaw/

If you have any questions regarding the research survey, please contact the principal investigator, Kelly Wardlaw (email: k.wardlaw@okstate.edu, phone: 405-707-0200) or Dr. Lynna Ausburn at Oklahoma State University (email: lynna.ausburn@okstate.edu, phone: 405-744-8322). If you have questions about your rights as a research volunteer, you may contact Dr. Shelia Kennison, IRB Chair, 219 Cordell North, Stillwater, OK 74078, 405-744-3377 or irb@okstate.edu.

Thank you for taking the time to help strengthen our organization.

Sincerely,

Kelly Wardlaw
Major, Ok Wing, CAP
Ph.D Student
Oklahoma State University

APPENDIX D

GRID/GROUP SURVEY

Welcome Page

Oklahoma CAP Grid and Group Assessment

Thank you for you interest in participating in my study titled: A Grid/Group Study of Gender Perceptions of the Culture of the Oklahoma Civil Air Patrol.

Your participation in this study is completely voluntary and anonymous. The survey will take approximately 15 minutes to compete. By clicking the "I Agree" link below, you are consenting to participate in this study.

Please read each question carefully and click the "submit" button at the bottom of the survey when you are finished.

If you have any questions regarding the research survey, please contact the principal investigator, Kelly Wardlaw (email: k.wardlaw@okstate.edu, phone: 405-707-0200) or Dr. Lynna Ausburn (email: lynna.ausburn@okstate.edu, phone: 405-744-8322). If you have questions about your rights as a research volunteer, you may contact Dr. Shelia Kennison, IRB Chair, 219 Cordell North, Stillwater, OK 74078, 405-744-3377 or irb@okstate.edu.

Thank You!

| **I Agree to Participate** | **I Decline to Participate** |
| Click here to proceed | Click here to proceed |

Oklahoma CAP Grid and Group Assessment

Please indicate your primary role in CAP (select only one):

- **Command** (Commander, Deputy Commander for Seniors, Deputy Commander for Cadets, Chief of Staff)
- **Command Support** (Administration, Finance, Historian, Inspector General, Personnel, Public Affairs, Recruiting, Safety)
- **Professional** (Chaplin, Legal, Medical)
- **Senior Programs** (Professional Development, Plans, Programs)
- **Cadet Programs** (Activities, Drug Demand Reduction, Leadership, Moral Leadership Officer, Testing)
- **Operations** (Communication, Emergency Services, Logistics, Pilot, Standardization/Evaluation)
- **Aerospace** (Aerospace Education Officer, Director of Aerospace, External Aerospace, Internal Aerospace)

Total years of service in Civil Air Patrol: [   ]

Please indicate your Gender:	
○ Female	○ Male

INSTRUCTIONS

Below are 24 items. Each item reflects a continuum from 1 to 8. For each item, read the entire item and choose the statement that you think best represents the Oklahoma Wing of the Civil Air Patrol. Then, on the continuum, mark the button that represents the degree to which that statement applies to Oklahoma Wing of the Civil Air Patrol.

1. Authority structures are:

Decentralized/non-hierarchical	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	Centralized/hierarchical

2. Job responsibilities are:

Ill-defined	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	Well defined

3. Individual members have:

Full autonomy in educational material selection	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	No autonomy in educational material selection

4. Individual members have:

Full autonomy in generating their educational goals	1	2	3	4	5	6	7	8	No autonomy in generating their educational goals

5. Individual members have:

Full autonomy in choosing instructional methods/strategies	1	2	3	4	5	6	7	8	No autonomy in choosing instructional methods/strategies

6. Members are:

Encouraged to participate/take ownership of their education	1	2	3	4	5	6	7	8	Discouraged from participating/taking ownership of their education

7. Members obtain instructional resources through:

Individual negotiation	1	2	3	4	5	6	7	8	Administrative allocation

8. Instruction is:

Personalized for each member	1	2	3	4	5	6	7	8	Not personalized for each member

9. Individual members are motivated by:

Intrinsic/self-defined interests	1	2	3	4	5	6	7	8	Extrinsic/institutional rewards

10. Hiring decisions are made:

With member input	1	2	3	4	5	6	7	8	Without member input

11. Training schedules are determined:

With member input	1	2	3	4	5	6	7	8	Without member input

12. Rules and procedures are:

Few	1	2	3	4	5	6	7	8	Numerous

13. Chain of command is:

Individual members working alone	1	2	3	4	5	6	7	8	All members working collaboratively

14. Members' socialization and work are:

Separate/dichotomous activities	1	2	3	4	5	6	7	8	Incorporated/united activities

15. Extrinsic rewards primarily benefit:

The individual	1	2	3	4	5	6	7	8	Everyone in the organization

16. Teaching and learning are planned/organized around:

Individual goals/interests   1   2   3   4   5   6   7   8   Group goals/interests

17. Performance is evaluated according to:

Individual goals, priorities, and criteria   1   2   3   4   5   6   7   8   Group goals, priorities, and criteria

18. Members work:

In isolation toward goals and objectives   1   2   3   4   5   6   7   8   Collaboratively toward goals and objectives

19. Unit goals are generated:

Individually by Commanders   1   2   3   4   5   6   7   8   Collaboratively by all members

20. Communication flows primarily through:

Individual, informal networks   1   2   3   4   5   6   7   8   Corporate, formal networks

21. Instructional resources are controlled/owned:

Individually   1   2   3   4   5   6   7   8   Collaboratively

22. People hold:

No allegiance/loyalty to the organization   1   2   3   4   5   6   7   8   Much allegiance/loyalty to the organization

23. Responsibilities of members and commanders are:

Ambiguous/fragmented with no accountability   1   2   3   4   5   6   7   8   Clear/communal with much accountability

24. Most decisions are made:

Privately by factions or independent verdict   1   2   3   4   5   6   7   8   Corporately by consensus or group approval

[Submit Form] [Reset Form]

Decline to Participate

Oklahoma CAP Grid and Group Assessment

If you would like to preview this instrument

Click Here

to enter the survey.

Close your browser to exit the survey website.

If you change your mind about participating in the survey, simply follow the link on the email you received requesting your participation and click on the link "I Agree" to give your consent and complete the survey.

Survey Incomplete - Missing Information

You have submitted an incomplete survey. Please check the items on the survey form to ensure that they have all been answered. Hit the 'Back' button on your browser (or click here) to return to the survey page.

Thank You

Oklahoma CAP Grid and Group Assessment

Thank you for your participation in this study.

For more information on this instrument and its use,
please contact the principal investigator, Kelly Wardlaw (email: k.wardlaw@okstate.edu, phone: 405-707-0200) or Dr. Lynna Ausburn (email: lynna.ausburn@okstate.edu, phone: 405-744-8322). If you have questions about your rights as a research volunteer, you may contact Dr. Shelia Kennison, IRB Chair, 219 Cordell North, Stillwater, OK 74078, 405-744-3377 or irb@okstate.edu.

OSU - COE - IRB

APPENDIX E

FOLLOW-UP EMAIL

Dear Fellow CAP Member,

My name is Maj. Kelly Wardlaw (Stillwater Composite Squadron), and I am a Ph.D. student in Occupational Education at Oklahoma State University. I am writing to (again) request your assistance in my study titled: A Grid/Group Study of Gender Perceptions of the Culture of the Oklahoma Civil Air Patrol. This study will describe how senior members of the Oklahoma CAP perceive the culture of the organization.

If you have already completed the survey, Thank You!, and you may disregard this email. Please do not complete the survey again!

If you **have not** completed the survey, I would like to once again ask for your help. Your opinions and perspectives on the Oklahoma Civil Air Patrol are important to this study and the organization. Please remember that your participation is voluntary and completely anonymous, and that your anonymity will be fully protected by maintaining all input securely and reporting results without any reference to you as an individual. There will be no way to track your answers back to you personally or to attribute them to you personally in the research report. The survey will only take about fifteen minutes (15 minutes) to complete.

Please click the link below to start the research survey. **By clicking on the link and then completing and submitting the survey, you agree that you understand the information and are giving your consent to participate and to having your input included in the research results.**

Make sure to read and answer each question carefully, and click the "submit" button at the bottom of the survey when you are finished. Please complete the survey by **April 1, 2011.**

http://frontpage.okstate.edu/coe/wardlaw/

If you have any questions regarding the research survey, please contact the principal investigator, Kelly Wardlaw (email: k.wardlaw@okstate.edu, phone: 405-707-0200) or Dr. Lynna Ausburn at Oklahoma State University (email: lynna.ausburn@okstate.edu, phone: 405-744-8322). If you have questions about your rights as a research volunteer, you may contact Dr. Shelia Kennison, IRB Chair, 219 Cordell North, Stillwater, OK 74078, 405-744-3377 or irb@okstate.edu.

Thank you for taking the time to help strengthen our organization.

Sincerely,

Kelly Wardlaw
Major, Ok Wing, CAP
Ph.D Student
Oklahoma State University

VITA

Kelly Ann Wardlaw

Candidate for the Degree of

Doctor of Philosophy

Thesis: A GRID/GROUP STUDY OF GENDER PERCEPTIONS OF THE CULTURE
OF THE OKLAHOMA CIVIL AIR PATROL

Major Field: Occupational Education

Biographical:

Education:

o Completed the requirements for the Doctor of Philosophy in Occupational
Education at Oklahoma State University, Stillwater, Oklahoma in
December, 2011
o Completed the requirements for the Master of Science in Leisure Services
Management at Oklahoma State University, Stillwater, Oklahoma in 2001
o Completed the requirements for the Bachelor of Science in Recreation
Management at University of Central Oklahoma, Edmond, Oklahoma in
1999

Experience:

o Stillwater Jr. High 8th Grade Science Teacher
o Oklahoma Civil Air Patrol Aerospace Education Officer
o NASA Aerospace Professional Development Center at OSU Manager
o NASA Solar System Educator

Professional Memberships:

o Oklahoma Civil Air Patrol
o Oklahoma Science Teachers' Association
o Women in Aviation, International
o Omicron Tau Theta
o Phi Kappa Phi

Name: Kelly Ann Wardlaw   Date of Degree: December, 2011

Institution: Oklahoma State University   Location: Stillwater, Oklahoma

Title of Study: A GRID/GROUP STUDY OF GENDER PERCEPTIONS OF THE
                            CULTURE OF THE OKLAHOMA CIVIL AIR PATROL

Pages in Study: 91   Candidate for the Degree of Doctor of Philosophy

Major Field: Occupational Education

Scope and Method of Study:

The purpose of this study was to describe member perceptions of the culture of the
Oklahoma CAP using an online version of the Douglas Grid/Group typology. This study
further described and compared differences in how men and women in the organization
view its culture. All senior members of the Oklahoma CAP with a valid email address on
file (N=351) were invited to participate in the study. A total of 85 participants responded,
70 male and 15 female. The following research questions guided this study:
   1. What is the perceived culture of the Oklahoma CAP by its senior members, as
      defined by Douglas' Grid/Group Framework?
   2. What differences exist in how male and female senior members of the Oklahoma
      CAP perceive the organization's culture?

Findings and Conclusions:

The mean Grid/Group responses for each participant were plotted on the Grid/Group
graph. Grid and Group total means and the means on individual items were compared
using independent sample t-test to determine whether there was a difference between
male and female responses. The following conclusions were drawn:
   1. The organizational culture of the Oklahoma CAP is perceived by its senior
      members as Strong Grid.
   2. There is some disagreement regarding whether the Strong Grid culture of the
      Oklahoma CAP is Strong Group or Weak Group.
   3. Overall, males and females perceive the organizational culture of the Oklahoma
      CAP very similarly.
   4. Males and females differ in the way they perceive communication occurring in
      the Oklahoma CAP. Female members tended to indicate that communication
      flowed through individual, informal networks. Males felt that communication
      flowed through corporate, formal networks.
   5. Factors that may cause lower female participation in the Oklahoma CAP appear to
      be outside the elements identified in the Grid/Group organizational cultural
      typology.

ADVISER'S APPROVAL: Dr. Lynna Ausburn