# A STUDY OF INFORMATION EXCHANGE BETWEEN UNITED STATES AIR FORCE BASES AND THEIR SURROUNDING COMMUNITIES

THESIS

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AFIT/GEM/ENV/04M-06

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## Abstract

Data, information, and knowledge are exchanged daily from United States Air Force (USAF) bases to surrounding communities. The purpose of this research is to aid managers and commanders in gaining a better understanding of their information flow and bettering their information management practices. The research specifically seeks answers to the questions of where information is exchanged, why information is exchanged, and to whom information is exchanged with.

To accomplish the research, a survey was developed and sent via e-mail link to the Company Grade Officers (CGOs) at two USAF installations. 118 CGOs responded to the survey providing an approximate response rate of 8.9%. Of the 118 CGO respondents, 55 were found to exchange some form of information with the community. These CGOs indicated that 43 of their co-workers also exchange information. Of the 55 CGOs found to exchange information, 61.82% did so using e-mail, but only 38.18% of them had to record the exchange in some fashion. Of the 44 CGO co-workers, 74.42% used e-mail to exchange information, while 48.84% did not have to record the exchange.

Telephone interviews were conducted with 18 of the survey respondents in order to gain clarification of initial survey responses as well as gain more detail behind each information exchange. The interviews revealed that information exchanges occur for the purpose of accomplishing some aspect of the subject's mission. A range of results are provided, including summaries of interviews, examples of exchanged information, and summaries of types of information exchanged. Finally, 10 abbreviated organizational charts are provided depicting organizations that exchange information.

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# I. Introduction

## 1.0 Background

Data, information, and knowledge; these terms all describe a separate and distinct tool used to describe, identify, or communicate from one entity to another. Regardless of how the exchange is performed (electronically, written, verbal, or body language), in most instances the exchange is performed in order to complete a set objective.

On a daily basis, people working on United States Air Force (USAF) bases utilize the exchange of data, information, and knowledge concerning their installation with the surrounding communities in an effort to communicate. This communication is necessary for the completion of numerous tasks, each needed to meet the goals and missions of working organizations located on base. In fact, the USAF can also be viewed as a single organization with numerous working elements and it is only when these elements communicate with each other as well as outside organizations that the ultimate goal of the USAF, to defend the United States of America, can be accomplished. In an effort to better describe and understand the exchange of data, information, or knowledge one needs to first know the precise definitions of each term. Prior to defining these terms, it is important to note that the definitions provided are extremely basic. This approach is taken only because numerous journal articles within the fields of Knowledge

Management (KM) and Information Management (IM) have used similar techniques to define these same terms.

Merriam-Webster dictionary defines the term “data” as “information in numerical form that can be digitally transmitted or processed” (Merriam-Webster, 2003). Due to how the term “data” has evolved over time, the term conjures many thoughts within the minds of those using the word or being communicated to. Thus, Merriam-Webster also defines the term as, “factual information used as a basis for reasoning, discussion, or calculation” (Merriam-Webster, 2003). Any form of data can be exchanged in order to communicate.

The dictionary defines information as “the communication or reception of knowledge or intelligence” (Merriam-Webster, 2003). Just as data has the ability to be exchanged from one entity to the next, information holds the same ability. Lai and Chu stated this ability best when they defined data and information by stating, “Data is raw numbers and facts, while information is a flow of messages or processed data” (Lai and Chu, 2000:2). In fact, it is when the transferred information provides the needed knowledge to perform a particular task that it becomes a valid form of communication.

Lastly, according to the dictionary, knowledge is, “the fact or condition of knowing something with familiarity gained through experience or association” (Merriam-Webster, 2003). Without having knowledge, organizations lose the ability to make wise, educated decisions. Instead, organizations blindly act in a manner that may negatively impact the goals that particular organization is striving to achieve. Alavi and Leidner made this conclusion saying “Knowledge is a justified personal belief that increases an individual’s capacity to take effective action” (Alavi and Leidner, 1999:2).

With a basic understanding of the terms data, information, and knowledge, the topics of information management and knowledge management can be discussed. These two systems are methods currently being utilized by various organizations to organize, manage, and track both information and knowledge both created and obtained by the organization. Due to this practice, this research effort will next discuss and define each system.

A Knowledge Management system is any system, or method of accomplishing a task, which "focus[es] on creating, gathering, organizing, and disseminating an organization's 'knowledge' as opposed to 'information' or 'data'" (Alavi and Leidner, 1999:2). An IM system, also known as an information system, is "a system that does not change the information but makes information available where it is needed at the right time in the right level of quality and with the right type of presentation" (Tom, 1987:305). Each of the terms described above are an integral part of either a KM or IM system. In addition, these resource management approaches have each been adopted by numerous organizations in their attempts to improve their business processes.

The benefits of an information management[1] were summarized by Lederer and Mirani who developed nine factors or benefits for an IS project. These benefits, described in detail in Table 1.1, include: improved information, strategic advantage, return on investment, reduced technology cost, better applications development, reduced

[1] Throughout this document, the terms 'information system' are often used in place of 'information management system'. In addition, the terms 'information management' and 'information resource management' will be used interchangeably throughout this thesis. Finally, it is important to note that information management is the practice of managing information resources and an information system is the tool used to manage the information.

travel cost, reduced workforce cost, business redesign, and adherence to government regulations (Lederer and Mirani, 1995:164).

| Benefit | Attributes of the Benefit |
|---|---|
| Improved Information | Improve management information for strategic planning.<br>Enable faster retrieval or delivery of information or reports.<br>Present information in a more concise manner or better format.<br>Increase the flexibility of information requests.<br>Enable easier access to information.<br>Improve the accuracy or reliability of information.<br>Improve information for management control. |
| Strategic Advantage | Enhance competitiveness or create strategic advantage.<br>Enhance the credibility and prestige of the organization.<br>Improve customer relations.<br>Provide new products or services to customers.<br>Provide better products or services to customers. |
| Return on Investment | Increase return on financial assets. |
| Reduced Technology Cost | Save money by reducing system modification or enhancement costs.<br>Save money by reducing hardware costs. |
| Better Applications Development | Allow applications to be developed faster.<br>Allow previously unfeasible applications to be implemented. |
| Reduced Travel Costs | Save money by reducing travel costs. |
| Reduced Workforce Costs | Save money by reducing the workforce.<br>Save money by avoiding the need to increase the workforce. |
| Business Redesign | Change the way the organization conducts business |
| Adherence to Government Regulations | Facilitate organizational adherence to government regulations. |

***Table 1.1: Benefits of an Information System***
(Lederer and Mirani, 1995:164)

Similar benefits have also been associated with the driving reasons for a KM system.

Alavi stated within her study of KM that the benefits of a KM system included "shortening the proposal time for client engagements, saving time, improving project management, increasing staff participation, enhancing communication, making the opinions of plant staff more visible, reducing problem solving time, better serving the

clients , and providing better measurement and accountability" (Alavi and Leidner, 1999:6). According to the managers within the same study, these benefits related to "cost reduction of specific activities, increased sales, personnel reduction, higher profitability, lower inventory levels, consistent proposal terms for worldwide clients, and enhanced and proactive marketing" (Alavi and Leidner, 1999:6). Each of the benefits is integral to an organization's viability within a particular market.

The USAF has initiated similar methods of organizing and disseminating information. This research effort will focus on resources within the USAF such as installation maps, databases containing information in reference to an installation, and digital images. In many cases, these same items are exchanged with entities of the surrounding community. More specifically, USAF installations or bases share data, information, and knowledge about itself, namely infrastructure data, to civilian vendors within the surrounding community for various reasons.

This thesis will focus directly on the *exchange* of all forms of data, information, and knowledge between a typical USAF base and its surrounding community, as well as the various management practices currently being used to manage that exchange. In addition, due to the nature of this research, the terms data, information, and knowledge will be used throughout to describe the underlying principle of a descriptive item specific to a USAF base.

## 1.1 Problem Statement and Context

Currently, the USAF engages in numerous methods to track, store, share, and utilize its information and knowledge resources. For example, a base map at an air force

base (AFB) is distributed and used in a variety of ways. Specifically, the base map is created by the Civil Engineer Squadron, distributed or shared with various organizations on base such as the Security Forces Squadron, the Communications Squadron, or within the Civil Engineer Squadron itself. Each of these elements further transfers the information to counterpart organizations located outside the base perimeter. A few examples are: the Security Forces sharing building location information with local base visitors, the Communications Squadron sharing communication line location with local telecommunication companies, and the Civil Engineer Squadron sharing the location of various utilities with local contractors. Ultimately, significant information is being transferred off base to the local community allowing their knowledge level about the base and its features to grow.

This exchange between the base and it surrounding community is an issue for a Wing Commander because he is the individual the public will turn to should the information be incorrect, misleading, or unauthorized. By finding out who information is exchanged with off base, the reason for the exchange, and the information that was exchanged, a Wing Commander will be better informed and prepared for concerns the surrounding community may have. In addition, by having prior knowledge of information that may be exchanged he can better manage and review the information.

## 1.2 Research Objectives

In an effort to better determine how, where, and why information about a local base is exchanged with outside organizations, this thesis will attempt to answer the following questions: 1) Where is data, information, and knowledge exchanged to the

surrounding community; 2) What are the controls in place to manage the information being transferred; 3) Who is receiving the information being exchanged?, finally, 4) Provide recommendations to manage and control the distribution of the information better.

## 1.3 Methodology

The methodology of this thesis effort will begin with the development of an electronic survey. The survey will consist of demographic questions as well as questions specific to how, when, why, and finally what kinds of data, information and knowledge are transferred off base. The survey focus group will consist of the company grade officers (CGOs) at two installations. Upon receiving survey responses, a second list of subjects will be compiled from those who took the survey in order to conduct telephone interviews. Telephone interviews will aide in developing a greater understanding of information flow. Finally, from all the information collected, information maps will be developed identifying the various organizations on a base along with how, when, why and what kind of information or knowledge is exchanged.

## 1.4 Scope

During this research effort, a survey was first developed which consisted of general questions. The general questions were designed to investigate the process and purpose of information exchange between a USAF base and its surrounding community. The surveys were administered electronically to the Company Grade Officers at two

USAF bases which were then followed by telephone interviews. The telephone interviews were only conducted with select individuals. Finally, data and information collected from the survey and telephone interviews was reported in the form of an information map consisting of an organizational structure which highlights those organizations found to exchange information.

## 1.5 Relevance

By documenting where information on base is transferred off base, the information which was transferred, and who the information is being transferred to, a manager or Wing Commander will better be able to track and control his or her information. Next, when this data or new knowledge of information flow is applied to a particular information tracking and management program, the manager's tracking and controlling abilities be able to become more efficient.

The proper management of an organization's data, information, and knowledge resources can become a valuable tool. It provides an added level of security, control, and peace of mind when the organization has the ability to decide who should know what. Fundamentally, "Information is a resource that should be aligned with the business's objectives in order to benefit the organization; this includes sharing information among those who can make profitable use of it" (Kolekofski and Heminger, 2003:522). This applies to information transferred between base and community.

## 1.6 Thesis Overview

Chapter one provided an introduction to the thesis to include the definitions of data, information, and knowledge. Chapter one also covered the relevance of the research effort as well as the methodology. Chapter two delves deeper into the topics of information and knowledge management. The chapter continues with detailed discussions of the USAF organizational structure, USAF information management practices, and the reasons for information sharing itself. Ultimately, chapter two provides the reader a concise review of the literature obtained for this thesis effort which has provided the foundation for the research. Chapter three details the methods used within this research effort to obtain the data and information needed to answer the research questions themselves. The chapter begins with how the survey was developed, approved, distributed, and finally a review of the data collected. Next, the chapter discusses how telephone interviews were conducted. Chapter four provides the demographic analysis obtained from survey responses as well as results of the telephone interviews. Finally, chapter five provides conclusions and recommendations.

# II. Literature Review

## 2.0 Introduction

This literature review begins by defining the terms “data”, “information”, and “knowledge”. Next, the review describes the management, information resource management, and knowledge management concepts. Following are discussions of the current methods being used by various organizations to control and manage accumulated information. The organizational structure of a typical United States Air Force base is described next. To follow, this review covers the current methods of information management being used by the United States Air Force. Finally, attitudes towards information sharing are discussed. The purpose of each area covered within the literature review is to gain a greater understanding how data, information and knowledge is both managed and shared within the USAF community as well as civilian community.

## 2.1 Management, Information Resource Management, and Knowledge Management

This section begins by further clarifying the definitions of “data”, “information”, and “knowledge” discussed in chapter one. This clarification is provided due to the close relationship between each term and the confusion that comes from this relationship. By further clarifying the meaning of each term the confusion which arises from their similar meanings and use will be lessened. Next, this section uses these terms as well as the concluded meaning of management to further introduce and clarify information resource management (IRM) and knowledge management (KM).

Maglitta states that "data" is simply raw numbers and facts, information is processed data, and knowledge is "information made actionable" (Maglitta, 1996). In essence, the three tools used for communicating with another entity or individual build off the other. "Data", the lowest tool of communication only involves the numbers or facts of a particular situation. Only after these numbers or facts are given some sort of application does information emerge. Finally, once information has been comprehended and understood, it becomes knowledge. The difference between information and knowledge is so subtle that the question often raised is, "which came first, information or knowledge?" Alavi et al. stated the difference best by stating, "…knowledge is not a radically different concept than information, but rather that information becomes knowledge once it is processed in the mind of an individual which then becomes information once it is articulated or communicated to others in the form of test, computer output, spoken or written words or other means" (Alavi and Leidner, 1999:2). Figure 2.1 provides a graphical representation depicting the evolution of data to knowledge.

***Figure 2.1: The Evolution of Data to Knowledge***

By applying management to the terms information and knowledge, the concepts of information management and knowledge management emerge. Prior to analyzing the

differences between information and knowledge management, it is prudent to clarify the term “management”, given its presence in both concepts.

### 2.1.1 Management Defined

The Merriam-Webster dictionary provides a generic definition of management: “judicious use of means to accomplish an end” (Merriam-Webster, 2003). Countless articles and textbooks have been written on the term “management” and the practice of the concept. In fact, the practice of management has been practiced since biblical times. It has been argued that Moses was one of the first managers in history. Peter F. Drucker goes as far as to say, “Management may be the most important innovation of this century…” (Drucker, 1977:8). But the question still to be answered is the question, what is management?

Drucker also states, “Management denotes both a function and the people who discharge it. It denotes a social position and authority, but also a discipline and field of study” (Drucker, 1977:11). By connecting the thoughts from Drucker with the definition in the paragraph above, one can conclude that the term “management” describes a group of individuals using various skills and authority levels to accomplish a desired task or a set of tasks. From this foundational definition, the concepts of information resource management and knowledge management can be further discussed.

### 2.1.2 Information Resource Management

There are several synonymous names for information resource management (IRM), or information management, each is a concept, with an ultimate goal of efficient management of information. IRM is a concept that has been evolving since the realization that information itself is a resource and needs to have sound management principles applied to it. The concept of IRM can encompass any method from a sound file cabinet method of organizing the various forms of data, information, or knowledge an organization may possess to the most sophisticated computer program. The United States government realized the importance of applying sound management practices to its growing volumes of information when it defined IRM as:

> the process of managing information resources to accomplish agency missions and to improve agency performance, including through the reduction of information collection burdens on the public (USC, 2004)

The US government definition was included within the Paperwork Reduction Act of 1980 and alludes to one of the major benefits of a computerized IRM program, paper reduction.

Mentioned earlier, an IRM does not need a computerized system in order to be implemented. Morton F. Meltzer stated, "The ultimate test of a good information system is not the extent of mechanization or the size, but rather the accuracy of the information in the system and, most importantly, how well...the manager, can use the stored information for planning, managing, and evaluating programs" (Meltzer, 1981:9). Adding to the above statement, the USAF guidelines specific to information management (Air Force Manual 37 Series) state "We [The USAF] must develop policies so that all Air Force members can manage, maintain, and use Air Force information as a valuable

resource" (DAF, 1995:3). The USAF further states "The primary purpose of managing Air Force information effectively and efficiently is to enhance the Air Force mission 'to defend the United States through control and exploitation of air and space'" (DAF, 1995:3). Each statement leads to the conclusion that regardless of the format an IRM program takes on, the primary purpose of the USAF IRM program is to effectively and efficiently manage Air Force information. Without successful management, the information itself will not be used effectively to further the USAF mission. This being said, the USAF has its own IRM program in place which is discussed later in this literature review.

### 2.1.3 Knowledge Management

Just as IRM has emerged on the scene of techniques for resource management, knowledge management has as well. In the case of KM, the resource isn't the information within an organization but rather the knowledge the organization holds.

Drucker stated, "In this society, knowledge is *the* primary resource for individuals and for the economy overall" (Drucker, 1992:95). Drucker clarifies his statement by noting that by gaining knowledge comes the ability to gain other resources necessary to complete a task. The definition posed by Lai and Chu builds on this philosophy: "Knowledge Management (KM) is managing the corporation's knowledge through the processes of creating, sustaining, applying, sharing and renewing knowledge to enhance organizational and create value" (Lai and Chu, 2000:1).

Thomas A. Stewart, an international expert in the field of intellectual capital, further breaks down the knowledge held within the KM concept into three distinct

knowledge resources. The first resource is human capital. This resource is the "source of innovation and renewal" (Stewart, 1998:76). Human capital refers to the collective ability and the individual abilities of employees within an organization to solve a problem or just to be creative or innovative. The second resource is structure capital. This resource refers to the abilities of an organization to meet its requirements. The third is customer capital which is, "the value of an organization's relationships wit the people with whom it does business" (Stewart, 1998:77).

Finally, a KM program from conception to its ultimate adoption and daily utilization can next be broken down into seven distinct activities. These activities, proposed by Lai and Chu include (1) Initiation, (2) Generation, (3) Modeling, (4) Repository, (5) Distribution and Transfer, (6) Use, and (7) Retrospect (Lai and Chu, 2000:3). Each activity, described in detail in Table 2.1, is used to fully integrate each of the three knowledge resources into a comprehensive knowledge warehouse. The ultimate goal of a KM project, upon completion, is to have the wealth of knowledge utilized by any authorized member of the organization to grow his/her own knowledge level, ultimately raising the knowledge level of the entire organization. By raising the knowledge level of the organization the organization, itself leads to one of the major benefits of a KM program, greater efficiency.

The management of knowledge and the various resources which embody the KM concept can be accomplished through the use of computer technology. This very thought is the cause of confusion many individuals have between the concepts of knowledge management and information resource management. In reality, it is when a company starts to initiate an information resource management system to facilitate their knowledge

management system that confusion and misconceptions arise. Regardless of the resource being managed (knowledge, information, people…etc.) and the techniques used to manage the resource, organizations must learn effective methods to manage their resources. This has resulted in numerous management techniques emerging from the computer technology field, a few are discussed next.

| Activity | Description |
|---|---|
| Initiation | Create within an organization the need for change, identify the knowledge requirements, and identify knowledge management strategies. |
| Generation | Generate the needed knowledge through all means available. |
| Modeling | Identify the source of the knowledge and begin to identify how to retrieve the knowledge. This activity is the organization step within the KM concept. |
| Repository | The overall storage area for the critical knowledge. |
| Distribution & Transfer | Identification and implementation of the various techniques available to share or distribute the knowledge. |
| Use | The actual use of the system to solve a given problem. |
| Retrospect | Review of the integration process in order to identify new knowledge. |

***Table 2.1: Knowledge Management Integration Framework***
Source: Modified from Lai and Chu 2000:3

## 2.2 Current Methods to Manage Information

As with any management scheme, a set of guidelines and goals need to be in place in order for any particular organization to stay on track. The same goes for the management of information or knowledge. Mr. Meltzer stated, "…principles of information management are needed as guidelines to help manager's do their jobs effectively and efficiently in today's information-oriented world" (Meltzer, 1981:153). Currently, on the market are numerous information resource and knowledge management computer programs which have been developed to do just that, provide the information or

knowledge manager an easier more efficient method of managing his/her resource. This section will review a few examples of currently available information resource management as well as knowledge management programs in an attempt to review currently available computerized IRM or KM techniques. The summarized IRM programs include: Campus2000$^{TM}$ Student Information System, ActionTrac System – An Enterprise Level Task Management Solution, and OnBase® Workflow. The KM programs to be discussed include: Knowledge Management by SupportSoft inc., and Knowledge Management by SystemLink.

The Campus2000$^{TM}$ Student Information System is a product developed by Campus Management in order to "meet the needs of today's demanding post-secondary education institutions" (Campus Management Corp, 2003). The program is marketed as an information management solution for campuses dealing with enormous amounts of administrative and student information. A few of the Campus2000$^{TM}$ features include: system security tools down to field level on data entry forms, tools which allow multiple users at multiple locations access to the needed information, tools which allow users access to the information via the internet, and tools which tie the current information sharing and organizational features of Microsoft Office to Campus2000$^{TM}$. In summary, the Campus2000TM software package provides an efficient means of securing, tracking, managing, and accessing critical information on a real time basis.

The next program, ActionTrac System, developed by Desert Sky Software, "provides secure, enterprise-wide task management and document tracking to assure accurate communication…" (Desert Sky Software, Inc., 2003). This program was developed to not only aid teams in completing tasks but to also provide a means of

storing various documents within a computerized file system. The program allows its users to control access, compile information or data regarding ongoing tasks, link tasks together, store documents, track ongoing tasks, and task history. The ActionTrac System (ATS) was developed with a distributed team concept in mind, thus "the SSL Encrypted ATS is accessible twenty-four hours a day, allowing secure system task execution and information transfer from any time zone or global location with internet connectivity" (Desert Sky Software, Inc., 2003).

OnBase® Workflow, developed by Hyland Software, Inc., "is enterprise software that combines the technologies of document imaging, computer output to laser disk/enterprise reports management (COLD/ERM), document management, and workflow into a single, web-enabled application" (Hyland Software, Inc., 2003). The OnBase® program provides its users a one stop shop for the storage or management of "every kind of document (images, text reports, application files, HTML forms, e-mails, video clips, etc.) as well as every stage of the document lifecycle (creation, input, storage, retrieval, revision, and distribution)" (Hyland Software, Inc., 2003).

"Knowledge Management" by SupportSoft Inc., "...goes well beyond traditional knowledge management because it's personal and proactive" (SupportSoft Inc., 2003). This KM program, called knowledge automation by its manufacture, allows its users to access an "Employee Knowledge Center" allowing "via the web…assistance in the form of 'how-to' articles, as well as provide personalized results and automated resolution" to any problem an employee is searching to solve (SupportSoft Inc., 2003). The program allows its users to tape into previously gained knowledge through other employees to solve new issues.

Finally, SystemLink provides a KM solution called “Knowledge Management.” The main difference between SystemLinks’ solution and SupportSofts’ solution is SystemLink not only provides a computerized map of the knowledge present within an organization but several workshops to introduce the KM concept to its users.

Regardless of the program chosen by an organization or the specific purpose of the IRM/KM solution, the underlying goal of each program remains the same. Each program was developed to provide a more efficient and logical method of organizing, storing, developing, utilizing, distributing and securing an organizations information or knowledge resources.

## 2.3 The United States Air Force Combat Wing Structure

So far, the literature review has discussed the intricate differences and relationships between the terms “data”, “information”, and “knowledge”, the background and benefits of an IM or KM solution; and, modern day examples of IM or KM issues. Next, the literature review will cover the typical USAF base organizational structure and a brief review of the responsibilities of the various elements. This discussion is necessary in order to identify where the potential areas of data, information or knowledge exchange might be for a typical USAF base.

The USAF relies on Air Force Instruction 38-101 for its guidance on how the base as a whole is organized as well as each individual working element of that base. Currently, AFI 38-101 is under revision in order to incorporate changes described within Program Action Directive (PAD) 02-05.

By referring to each document, namely AFI 38-101 and then PAD 02-05 for significant changes, the new combat wing organizational chart shown in Figure 2.2 emerges. On this chart, a base or wing is led by a wing commander who in turn has his or her staff (composed of public affairs, safety, history, staff judge advocate, command post, chaplain, manpower and quality, plans, social actions and inspector general), the comptroller, and four group commanders who work directly for him. According to AFI 38-101, "…the wing commander concentrates on the wing's primary mission and delegates authority to subordinates so they can accomplish their responsibilities" (DAF, 1998:14). The four groups and their respective commanders whom the wing commander delegates authority to are: the Operations Group, the Maintenance Group, the Mission Support Group, and the Medical Group. In addition, each of the groups has their own respective squadrons.

Under the Operations Group, there are numerous operational squadrons as well as operational support squadrons. The primary mission of this group is to "operate primary mission equipment" (DAF, 1998:15). The aircraft, missiles, satellites, etc. are all operated under this group. The Mission Support Group is responsible for all support functions which aid in mission accomplishment. This includes infrastructure construction and maintenance, communications support, lodging, fitness, meals, entertainment, base security, contract support, personnel management, and logistics support. The Medical Group is responsible for all medical and dental requirements of the Department of Defense and its members or dependents. This also includes retired military members, reserve, and guard members. Finally, the Maintenance Group is

responsible for all repair and maintenance aspects of the operational equipment. This includes the base vehicle fleet, aircraft, missiles, satellites, and so on.

At some bases, there are variations of the combat wing structure which have been created for a particular requirement. A prime example is the testing and research organization of the USAF. At some installations, there is also a test wing in addition to the operations wing. Each of these test wings, like that of a basic USAF wing structure is divided into various test groups and squadrons with specialty fields as well as testing responsibilities.

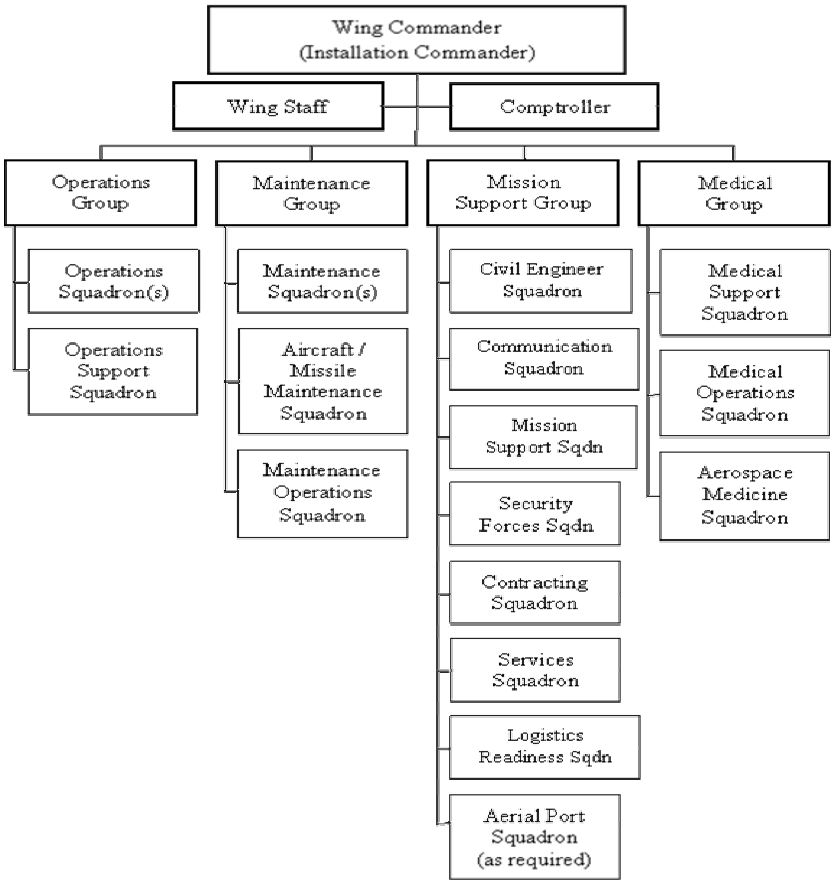



***Figure 2.2: New Combat Wing Organizational Chart***
(Source DAF, 2002:A-I-1)

## 2.4 Current USAF Information Resource Management Practices

The literature review will next discuss how the Air Force manages the vast amounts of data, information, and knowledge produced on a daily basis. To start, this section will discuss who is responsible within the USAF for IRM. This topic is then followed by two newly emerging practices which the USAF is using to manage information.

Within the USAF, both military and civilian employees hold information management positions. In fact, "Military and civilian information management specialists are responsible for the efficient and effective management of information, in all media, within their respective organizations" (DAF, 1995:2). To aid the military and civilian information management specialists, the USAF developed a series of manuals, the 37 series. One manual in particular, Air Force Manual 37-104, "clarifies what information managers do, why their jobs are important, and how they can do those jobs better to support the Air Force mission" (DAF, 1995:2). Even though the 37 series of manuals is in place for Air Force information managers to utilize today, the USAF is still undergoing a major change in how it handles the management of its information resources. During the change in IM procedure, the 37 series should still be considered valid to provide guidance on dealing with information resources, yet it is important to remember that it is no longer current.

The 37 series is no longer current due to the Defense Authorization Act for Fiscal Year 1996 being signed by the President of the United States. This act required the President to also sign the Federal Acquisition Reform Act (FARA) and the Information Technology Management Reform Act (ITMRA). Under these two acts, known as the

Klinger-Cohen Act for short, section 5125 required the USAF to establish a Chief Information Officer (CIO) position. The act also included sections which amended the Paper Reduction Act and specifically designated the USAF CIO to be in charge of the information resource management program (Air Force-CIO, 2004). No other guidance has been issued to establish a solid chain of command from the CIO office down to base level as was found within the 37 Series. In fact, the only chain of command issued thus far is shown within Figure 2.3. Thus, to determine what the current USAF information resource management practices are, Air Force employees themselves will need to await guidance from the CIO office or refer to the outdated 37 Air Force Manual Series.

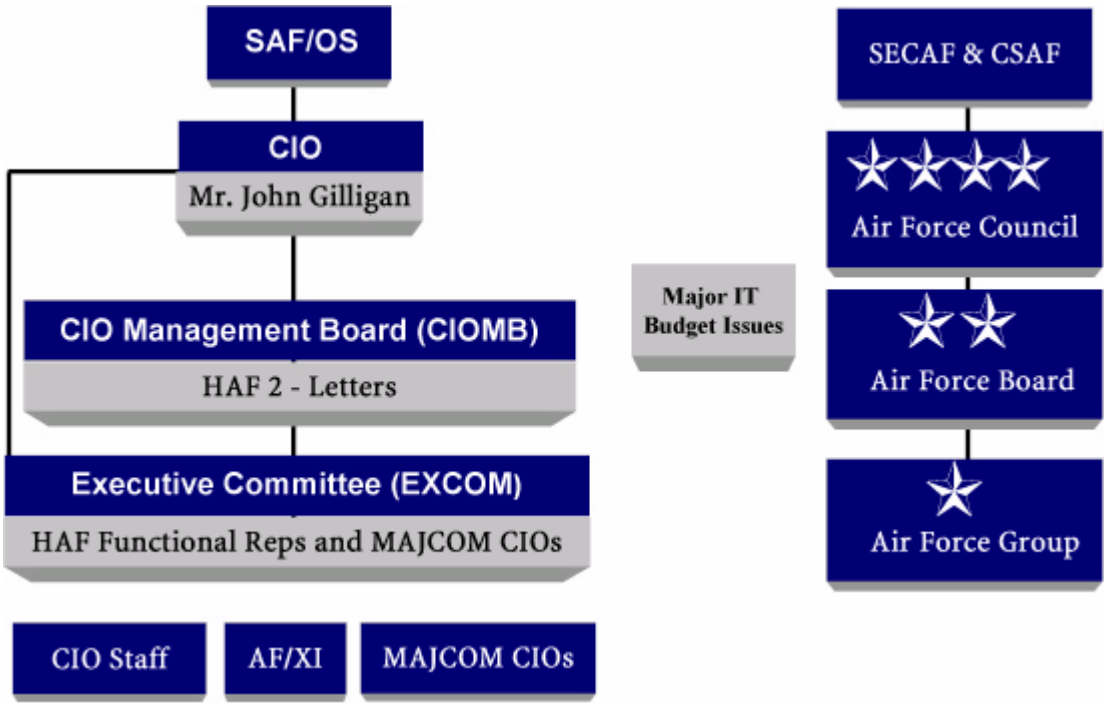



***Figure 2.3: USAF CIO Structure***
*Source: Air Force CIO, 2004*

At the same time the USAF is restructuring its IRM practices, it is also introducing numerous computerized IRM programs, one of which comes from PureEdge Solutions. Recently, the USAF awarded a $6.67 million multi-year contract to PureEdge Solutions Inc., "to transform existing static e-forms to an interactive process based on current e-business models for the United States Air Force" (PureEdge, 2003). Upon completion of this contract approximately 15,000 e-forms will be converted to PureEdge e-forms. This means that the current method of printing a form only to be filled out by hand will be transformed into a computer based approach. With this contract the USAF also provides its members the ability to "digitally sign documents, use ad hoc routing, move data in and out of other systems, and store all elements of a transaction on one secure file,…" (PureEdge, 2003).

Another IRM practice currently being used within the USAF is GeoBase. This concept has an ultimate goal of allowing "users to visualize their mission assets in an intuitive, integrated, web-enabled manner that reduces their time to insight and achieves decision superiority" (GIO, 2002: 5). GeoBase is a concept adopted by the USAF to exploit currently available "geographic information systems (GIS), global positioning system (GPS), remote sensing, and associated technologies" (GIO, 2002:5). This exploitation of commercial off the shelf (COTS) software provides the decision makers as well as all levels of command within the USAF a "one stop shop" for all base imagery, mapping, and database needs. The ability to retrieve base maps along with the databases which provide additional information regarding the maps, allows for an increased intuitive ability for decision makers or commanders. Figure 2.3 illustrates the usefulness

of this technology, allowing the users located at Kadena AB in Japan to quickly identify a travel route.

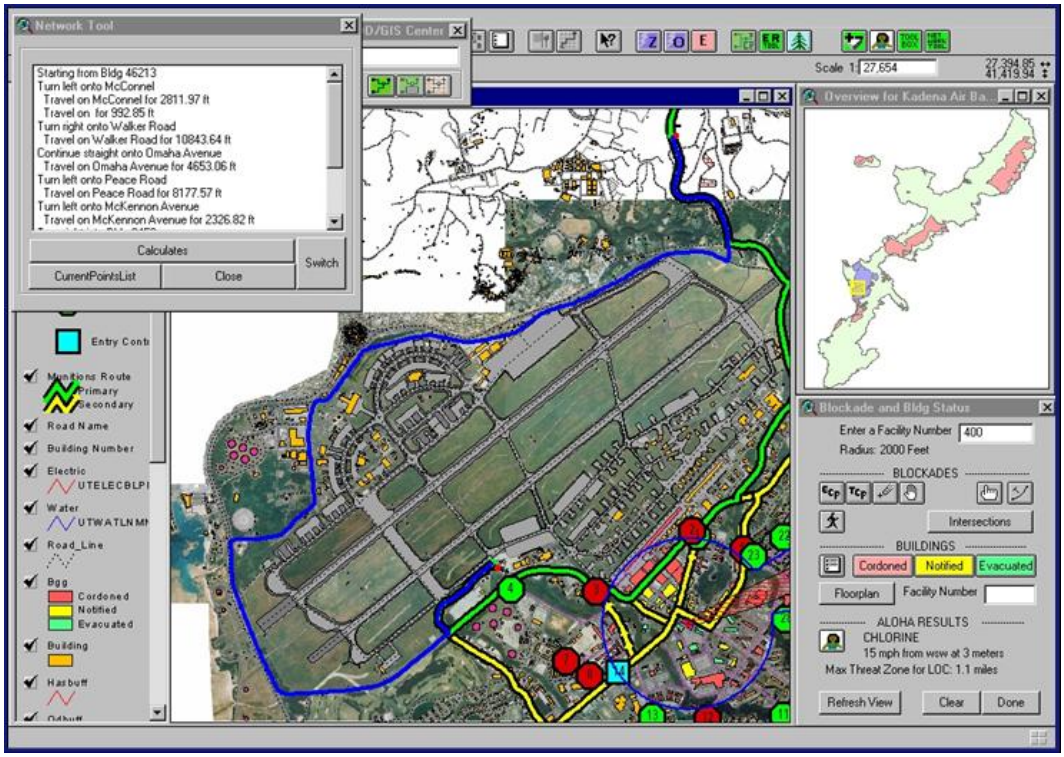



***Figure 2.4: GeoBase example of a travel route from Kadena AB, Japan***
(Obtained from GIO(b), 2002: Slide 11)

Each of these programs is an initiative currently under development by the USAF with an ultimate goal of more effectively and efficiently managing the information available to its members.

## 2.5 Information Sharing

Once an organization has the management practices in place to manage its data, information, and knowledge, the next step is to manage the sharing of those resources with an outside organization. It is conceivable that organizations can want a range of

management controls on sharing information resources to include complete open sharing, some control (documentation of transfer), to no sharing. This section will cover literature specific to the sharing of information in general, and the attitudes or tendencies of one who is willing to share. It is important to cover this topic due to the goal of this thesis being focused on the exchange of information at base level as well as the motivation for information sharing, the purpose of the exchange, and how these topics are related to the overall importance or value of the information.

Regardless of the management practices in place to control the exchange of an organizations data, information or knowledge resources, when a need to exchange data, information or knowledge arises, the exchange will take place**.** This is due to what call prosocial organizational behaviors (Brief and Motowidlo, 1996:710). According to Mr. Brief et al., "prosocial organizational behavior is behavior which is (a) performed by a member of an organization, (b) directed toward an individual group, or organization with whom he or she interacts while carrying out his or her organizational goals, and (c) performed with the intention of promoting the welfare of the individual, group, or organization toward which it is directed" (Brief and Motowidlo, 1996: 711). This definition includes such behavior as sharing information. What motivates or de-motivates an individual to share information?

This is a question that can only be answered by first examining the different attitudes an individual could possibly have towards the information. Constant et al. performed an experiment to investigate these attitudes. It was found, when an individual has a feeling of personal ownership towards information, such as computer expertise, the owner of the information is not cautious from sharing the information should there be a

sense of personal benefit from doing so. Next, when someone views the information as the property of the organization, an issue does not exist for sharing the information due to the holder not personally owning the information. Constant et.al concluded that an individual's feeling of personal gain from sharing information outweighs an individual's justification to share the information due to ownership. This conclusion leads to the belief that even though an individual could not receive personal gain from sharing information, the rights of the recipient for that information will still be respected and the information exchange will take place. This exchange of information regardless of personal profit is in possible due to numerous other factors which influence the exchange of information (Constant et al., 1994:414).

A few more considerations of information exchange are the relationship of the information holder and receiver, the credibility or reliability of the information requested, the amount of information requested, and the information content. These considerations with respect to information exchanged were validated within a study performed by Keith E. Kolekofski and Alan R. Heminger. Within their study it was concluded:

> …managers should consider worker attitudes toward the ownership versus stewardship of organizational information. However, they should also address the instrumentality of sharing and the interpersonal feelings of those engaged in potential information-sharing relationships. Instrumentality includes the size and amount of information requested, what the information represents in terms of power, the value it represents, and who will benefit from the sharing. All these influences may impact the likelihood that information will be appropriately shared within the organization (Kolekofski and Heminger, 2003: 526).

In summary, when considering whether or not an individual will share data, information, or knowledge, many factors will influence the exchange taking place. These factors include: the relationship between the two exchanging parties, the attitude of

ownership towards the materiel being exchanged, the attitude of stewardship towards the material, the perceived benefits from the exchange, and the shear amount or size of data, information or knowledge being exchanged. Each of these factors will need to be addressed during the research when attempting to answer the question of why was the data, information, or knowledge exchanged.

## 2.6 Summary

This literature review covered detailed definitions for the terms “data”, “information”, and “knowledge.” In addition, the review covered the topics of management, information resource management, and knowledge management. Next, the review covered a few modern day examples of computerized IRM and KM techniques. Following, the review discussed the organization of a typical USAF base followed with current methods the USAF has adopted to manage their information resources. Finally, the review covered present day literature in the field of information sharing.

# III. Methodology

## 3.0 Overview

The focus of chapter two was to review current literature dealing with three tools of communication ("data," "information," and "knowledge"). In addition, the review covered the methods used to manage these tools. The purpose of each area covered within the literature review was to gain a greater understanding how data, information and knowledge is both managed and shared within the USAF community as well as civilian community. In addition, the areas covered provide interesting insight as to why exchanges of information occur. The purpose of chapter three is to expound on these reviewed principles by describing the methodology chosen to answer the research questions posed in chapter one. This chapter includes a review of available methodologies, the specific methodology approach for this thesis (a survey), survey focus group, survey administration, and finally data validation and analysis.

## 3.1 Review Available Methodologies

Francis C. Dane stated, "the ultimate goals of research are to formulate questions and to find answers to those questions" (Dane, 1990:5). In chapter one, the following research questions were formulated: 1) Where is data, information, and knowledge exchanged to the surrounding community; 2) What are the controls in place to manage the information being transferred?; and 3) Who is receiving the information being exchanged? The goal of this chapter was to propose a methodology that will potentially answer these questions. Various methods of research were examined as to their value in

determining satisfactory results. The most common research methods or strategies today are an experiment, a survey, an archival analysis, a historical study, and a case study. When deciding which method is best suited to for a specific research effort, the research questions posed first need to be clearly defined and understood. Only at this point can the various methods of research available be examined as to their relevance. In fact, the relationship between research methods and the form of research question being asked was best summarized by Robert K. Yin (Table 3.1).

| Strategy | Form of Research Question | Requires Control of Behavioral Events? | Focuses on Contemporary Events? |
|---|---|---|---|
| **Experiment** | how, why? | Yes | Yes |
| **Survey** | who, what, where, how many, how much? | No | Yes |
| **Archival Analysis** | who, what, where, how many, how much? | No | Yes/No |
| **History** | how, why? | No | No |
| **Case Study** | how, why? | No | Yes |

***Table 3.1: Relevant Situations for Different Research Strategies***
(Yin, 2003:5)

In Table 3.1, Yin shows that when determining the strategy for a particular research question, two questions must be answered. These questions are, whether or not the research effort requires control of behavioral events, or if the research will focus on contemporary events. In the case of an experiment strategy, the strategy is best conducted "when the investigator can manipulate behavior directly, precisely, and systematically" (Yin, 2003:8). In addition, during an experimental study, the investigator should focus on a present-day event. Dane defines experimental research as "the general

label applied to methods developed for the specific purpose of testing causal relationships" (Dane, 1990:5). Though this research effort is focused on present-day (current information exchange) events, there is no requirement to test causal relationships. Though this research is attempting to find the reasons for information exchanges the research is not focused on how the need came about, thus an experimental approach was not chosen. Referring to Table 3.1, an archival analysis does not require manipulation of any behavior and both does and does not require a focus on contemporary events. Dane states, "archival research is any research in which a public record is the unit of analysis" (Dane, 1990:169). Knowing that the ultimate goal of this research effort was to document current exchanges of information, an archival approach was not selected. A historical study does not require any manipulation of behavior nor require any focus on contemporary event. Just like an archival study, the goal of this research wasn't to look into the past for exchanges of information but rather document modern day examples. Thus, a historical study was not selected. A case study approach does not require control of behavioral events and does focus on contemporary events, both qualities being exact matches for the purposes of this study. Due to the time constraints of this research effort, conducting large amounts of case studies is not a feasible task and did not occur. A survey, on the other hand, does not require manipulation of any behavior, focuses on present-day events, and does apply to the stated research questions.

A survey was used for this research effort because it is the most efficient method available to obtain the needed results. A survey allowed the researcher to obtain responses from numerous individuals or subjects congruently. This not only shortened

the response time but also allowed for a larger response group, unlike case studies. In addition, telephone interviews for further response clarification occurred on add needed basis. The next section of this chapter will discuss the specific survey methodology chosen for this thesis.

## 3.2 Specific Methodology Approach for Thesis

Implementing a survey methodology required developing a focused, appropriately designed survey, identifying a group of people to take the survey, administering the survey, and finally collecting and analyzing the data. Each of these topics is discussed in detail within this section.

### 3.2.1 Survey Design

"Survey methods are probably the oldest methods in the researcher's repertoire, and they are the methods with which the general public is most familiar. All of us have asked people for information, and all of us have been asked by others to provide information" (Dane, 1990:119-120). The familiarity individuals have with surveys and their usefulness in retrieving information has allowed the survey strategy to become an incredibly useful research tool for a researcher to possess. During a survey, questions are "presented orally, on paper or in some combination, but the response comes from the person to whom the question is addressed at the time the question is asked" (Dane, 1990:120).

The design of the survey for this research was initiated with two goals in mind. The first goal was to develop a common baseline of data from each of the participants.

The common baseline was then built upon to achieve the second goal which is to unveil the specific areas where information is being exchanged between a base level organization and the surrounding community. In developing the survey's line of questioning, much thought was put into the actual wording, ordering, and format of each question. The purpose of this was to eliminate questions that negatively impact the information being search for. Dane states that within a survey, "the item topics, instructions, item formats, and arrangement of the items can all have an effect on the information you obtain" (Dane, 1990:123). Therefore, each question was designed with a purpose in mind, as well as a design allowing participants to describe the type of information exchanged and the management practices in place to control/record the exchange. Achieving the necessary results was accomplished through closed and open ended questions.

The closed ended questions were used to accomplish the first goal by beginning the data collection and laying a general foundation of all survey participants by having each identify their rank, length of time on active duty, length of time at their base, length of time at their current position, and the duties associated with that job. After the common foundation is set, the open ended questions began. These questions probed for any areas the participant, individual superior to the participant, or individual subordinate to the participant may have exchanged information (Refer to Appendix A for a complete list of questions.).

Prior to sending out the survey, a list of participants was developed. The next part of this chapter discusses in detail the criteria a participant had to meet as well as how the AF bases to be researched were selected.

### 3.2.2 Participant Selection

Simply stated, the USAF is an extremely large organization containing an unimaginable number of members potentially exchanging information daily. Due to the limited time of this research, surveying the entire USAF is not a feasible undertaking. Thus, this study focused on only one particular group. The group of focus needed to meet a set of criteria, which is put in place to narrow down the pool of potential participants and to maximize the quality of the information retrieved.

The criteria for an individual who participated in the survey as well as the substantiation for each is as followed:

1) The participant must have been employed by the USAF.

*SUBSTANTIATION: This flows from the initial research questions and the attempt to find where information is exchanged with the USAF and the local communities, thus the need for USAF employees.*

2) Participants should have worked for base level organizations at an Air Force base.

*SUBSTANTIATION: All individuals working for a MAJCOM, Numbered Air Force, or higher level of responsibility will be excluded for the purposes of this research. The purpose of the limitation was to focus on organizations with a greater potential of information exchange with local communities.*

3) Participants needed to have been at their job for 6 months and in the Air Force for a minimum of 6 months.

*SUBSTANTIATION: Job experience is required to fully understand the purpose of interacting with the community.*

4) The subject should have held a position at the lower levels of management.

*SUBSTANTIATION: People in lower levels of management are going to be responsible for the exchange of information or supervise those that do.*

Even with this list of criteria, the number of potential participants is still too great for the time period of this research. Therefore in order to accomplish the research, the scope of research must further be limited to:

5) Individuals should have been easily accessible through the "Global" e-mail address listing.

6) Individuals should have been stationed at a continental United States (CONUS) base. And,

7) Individuals should have held the rank of a company grade officer (2d Lt – Capt) (CGO).

For this study, CGOs were contacted through the USAF Global e-mail address listing. Bases have group e-mail lists that the researcher had access to, set up by each bases' communications squadron. The Global e-mail address listing was an extremely expedient and effective method soliciting participation due to each CGO having his or her own e-mail address. Should this method of contacting participants have failed, command posts would have been contacted for their support in contacting assigned CGOs.

Lastly, in addition to the criteria listed above, one more criterion was needed to narrow down the pool of participants. This criterion was for specific base selection. This criterion as well as substantiation is as follows:

8) A selected base should have a military support structure in place, i.e. bases that do not have an entirely civilian workforce.

*SUBSTANTIATION: Due to many bases recently transitioning from a military based support structure to a civilian based support structure, civilians or contractors are now assigned to positions where CGOs historically would be assigned. By selecting a base that still have military support structures, the greatest chance of finding a base with large amounts of CGOs still in place will be achieved.*

These criteria should have provided a sufficiently large, appropriately qualified group of participants to take the survey.

### 3.2.3 Survey Administration

To conduct the survey, a multi-step process was followed. This section will introduce and describe each step in detail. To begin, the steps were:

1) Participant Contact

2) Survey Distribution

3) Response Compilation

4) Follow-up Research

Participant contacted occurred through an e-mail message sent to each CGO on the selected bases' global distribution list. The e-mail introduced the researcher, the purpose of the survey, as well as the link taking the individual to the survey.

Survey distribution occurred through the use of web based technology. The survey itself was in the form of a web page and was stored on the Air Force Institute of Technologies (AFIT) server. A web page survey allowed the participant to click a box next to the appropriate response for each question. In addition, questions requiring a

written response had appropriate areas for the participant to type in needed answers. By using a web based survey, it was possible for each participant to access the survey by merely clicking on the link distributed with the initial e-mail. This feature eliminated the need for mailing the survey to each participant as well as back to the originator. The web based survey also allowed for real time response compilation.

The collection of the participant's responses occurred through the use of an Access® database. As soon as the participant provided his answers to each question, the database was instantaneously updated. The database itself is much like a common spreadsheet specifically designed to store participant's responses in an organized, concise fashion. Upon receipt of subject's responses the researcher next contacted individuals who met a specific set of criteria for follow-up research through telephone interviews. Telephone interviews took place in order to clarify survey responses, to gain specific information regarding why an exchange occurred, what was the information exchanged, who the information was exchanged with, and did the exchange need to be recorded or did an individual need to be notified of the exchange. In addition, the telephone interviews were used as a platform to obtain examples of information being exchanged. Each participant contacted was solicited for any examples available for this research project.

In his book *Research Methods*, Francis C. Dane defined an interview as "a structured conversation used to complete a survey" (Dane 1990: 128). This conversational style of conducting a survey applies to both face-to-face interviews as well as telephone interviews. The major difference between face-to-face and a telephone survey is the presence of the survey participant. Combining both written and interview

survey techniques ensures that participants will not only provide information useful in tailoring management practices but also raises the awareness level of previously hidden areas of needed management. This means by first using the written surveys and next using interview surveys, the researcher was able to document the areas that survey participants are working, as well as areas where information is being exchanged. Just like the web based survey, responses provided during telephone interviews were recorded. During the telephone interviews, participants' meeting the criteria listed in Appendix I will have their responses recorded in written form.

Upon receipt of the participant's responses, results were validated and analyzed. The next section of this chapter discusses how this took place.

## 3.3 Data Validation and Analysis

Survey results or data can be analyzed and validated though a wide range of methods. In fact, when looking at what really takes place during the analyzing of data, it can be surmised as the "tallying and averaging of responses, looking at their relationships, and comparing them" (Fink, 1985:73). The validity of the participant's responses refers to "the precision and accuracy of the information offered by the questionnaire or interview" (Fink, 1985:20).

This section will describe the methods used during this research effort to first validate participant's responses and next analyze them. The first method of data validation was the pre-testing of the questionnaire, followed by response comparison, local expert opinion, and finally receipt of real world examples. In addition, for the

purposes of this research, two main methods of analyzing data were selected. These methods were basic statistical techniques, and information mapping.

The pre-testing of a questionnaire is a critical step to ensure the questions themselves are reliable and can provide valid responses. This means that regardless of the day, gender of the participant, or any other extenuating circumstances, the questions themselves will provide consistent/reliable answers. The pre-testing occurred through the solicitation of opinions from a group of 22 Civil Engineer officers; each is also a graduate student within the AFIT program. This group of 22 individuals was solicited for opinions due to the researcher having immediate communication with each individual. Each of the responses/opinions provided was adapted and integrated into the survey instrument, in order to provide a more reliable and validated questionnaire.

The comparison methodology was used to validate the occurrence of information exchanges from the survey results. This means that if the survey identifies an office at Base X that exchanges information on a routine basis with the community, like public affairs, and the survey information from Base Y provides the same results then the need for an exchange of information has just been validated. During this research the various responses from one base to another was compared for any similarities and then reported as such.

Expert opinions were used to validate responses by supplying participant responses to base experts (Mission Support Group Commanders, Operations Group Commanders, etc.) From each particular organization a response was obtained, an expert opinion was solicited on potential areas where exchanges are missing. In addition, the researcher looked for understanding as to why exchanges happened. The researcher also

asked the expert to validate the responses and say whether they are correct or not. Finally, the experts asked to discuss management controls on the information exchange.

When telephone interviews were conducted, survey participants were asked to send real world examples of the information exchanged. For example, if a participant responded that he was exchanging the base map with local delivery drivers, the researcher asked for an example of the map being exchanged. This allowed the researcher to further examine the exact information that was exchanged between a base and its surrounding community. Each of these methods was critical for the purposes of bringing credibility to the data that was retrieved.

For analysis purposes, the comparison of participant responses was combined with basic statistical techniques. The basic statistical techniques used were as simple as stating the percentage of respondents who exchange information on a daily basis or stating the percentage of career fields supplying the base map to local contractors. Specifically, a descriptive statistical approach was utilized. Descriptive statistics are defined as “a medium for describing data in manageable forms” (Babbie 1990: 283).

Finally, the mapping technique used is shown in Figure 3.1. This technique of data analysis is used to present the responses in a format that may have revealed further insight behind the ongoing exchange of information.

In summary, prior to analyzing the data, care was taken in validating the responses. This occurred through numerous means including response comparison, expert opinion, real world examples, basic statistics, and finally information mapping.

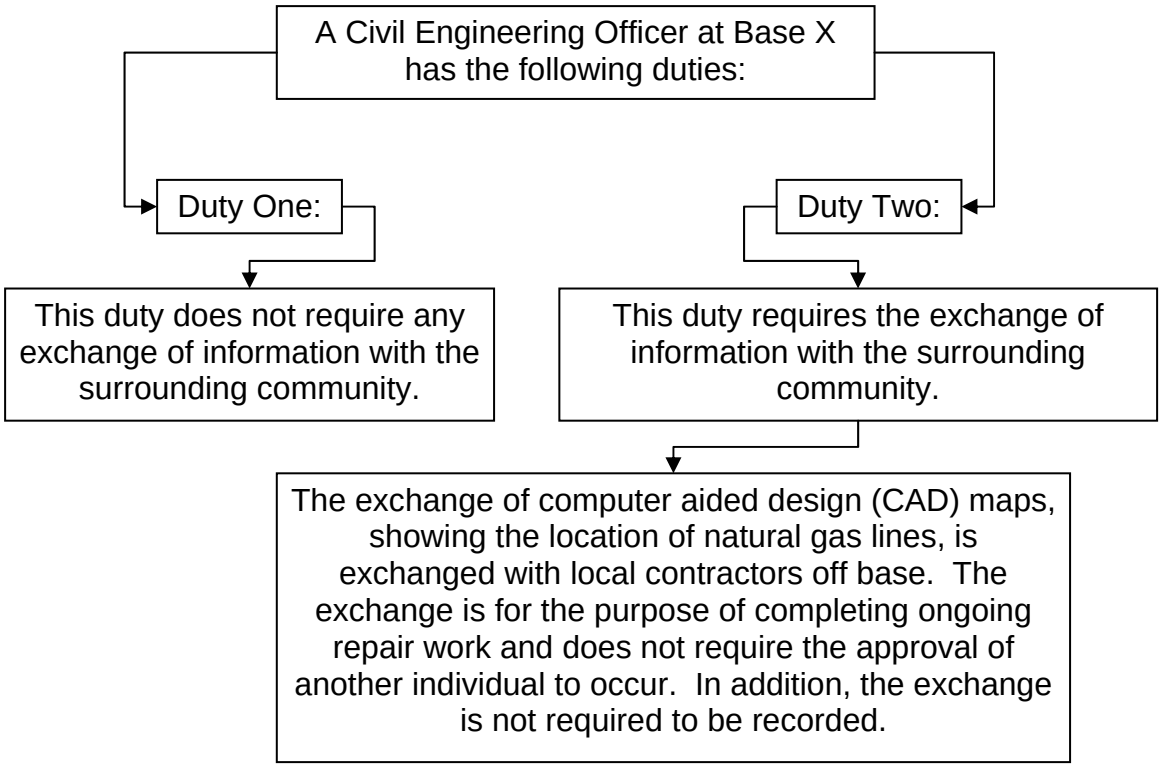



***Figure 3.1: Example of mapped information exchange***

## 3.4 Summary

The primary focus of chapter three was to describe the chosen methodology used within this research effort for the purpose of answering the research questions posed in chapter one. Chapter three discussed the background of the chosen methodology (a survey), the specific survey approach to be taken, the survey design, the method of survey distribution and data collection, and the purpose and goals of the survey.

# IV. Research Results

## 4.0 Overview

The focus of chapter three was to discuss the methodology of the research project. In doing so, the chapter answered the question of how the project will be accomplished. This chapter describes how the research was accomplished. The chapter will begin by detailing the survey questions, and then provide a discussion of survey review and pre-testing procedures. Next, the chapter will discuss the survey distribution and collection methods, and survey results. Finally, chapter four will conclude with the telephone interview process and results.

## 4.1 The Survey Questions

During development of the survey, a great deal of time was devoted to ensure each question presented to survey participants fulfilled a specific purpose. In fact, the design of each question was specifically focused on the accomplishment of two goals. The first goal was to develop a common baseline of data from each of the participants. Then the second goal was to build upon the common baseline by unveiling specific areas where information is being exchanged between a base level organization and the surrounding community.

The specific questions that focused on developing a common baseline of data from each participant were the following:

1) What is your rank?
2) How long have you been on active duty?

3) How long have you been at your current installation?

4) How long have you held your current position?

5) What is your job title?

6) What are the duties associated with this job?

Each question was immediately followed by either a list of potential responses that participants were to choose from (questions 1-2) or a blank space for the participant to type a response (questions 3-6).

Following the first six questions were questions dealing more specifically to the second goal. These questions were:

7) Reflecting on your current job, please select all relevant forms of information exchange associated with your current position which occur with the local community.

8) If an exchange of information takes place, please provide the reason for the exchange and how often the exchange occurs.

9) Did you have to inform anybody of any type of information exchange, and if so, who?

10) Did you have to record the exchange of information at any time, and if so, why and how was the exchange recorded?

11) Do any of the exchanges occur over e-mail?

12) Do you have any recent examples of information exchanges with the surrounding community?

Each of these questions was, just as the first six, immediately followed by either a list of potential responses for participants to choose from (question 11), a blank space for the

participant to type a response (questions 8), and finally a combination of each response method (questions 7, 9, 10, and 12).

Following the first 12 questions of the survey came another six focusing specifically on the co-workers of each survey participant. The subsequent research questions for co-workers are as followed:

13) Shifting the focus from you to the other employees in your office, please select the situations where an individual working for you, above you, below you or just near you may exchange information with the local community.
14) If individuals working for you, above you, below you or near you exchange information with the surrounding community, please provide the reason for the exchange and how often the exchange occurs.
15) Do any of the exchanges the individuals working for you, above you, below you or near you occur over e-mail?
16) Could you obtain a recent example of information exchange from your co-workers to the surrounding community?
17) Do individuals working for you, above you, below you or near you have to inform anyone about the information exchange, and if so, who?
18) Did the individuals working for you, above you, below you or near you have to record the exchange of information at any time, and if so, why and how was the exchange recorded?

Once again, these questions provided a list of potential responses for participants to choose from (question 15), a blank space for the participant to write a response freely

(questions 14), and finally a combination of each response method (questions 13, 16, 17, and 18).

## 4.2 Survey Reviews and Pre-testing

After the development of the written survey instrument, it went through multiple review and pre-testing procedures. The survey reviews came in two different forms. The first was the Air Force Personnel Center (AFPC) survey approval process and the second was the Human Subjects Review Board (HSRB) survey approval process. Finally, the survey underwent a pre-testing phase from the Graduate of Engineering Management, graduation year of 2004 class. Each of the survey review and pre-testing procedures is discussed below.

### 4.2.1 AFPC

The AFPC approval process is an integral step for any survey conducted within the USAF. With few exceptions, the Air Force Personnel Center is the Air Force office responsible for all surveys conducted within the USAF. HQ AFPC customer assistance directorate, survey branch (DPSAS) "controls and approves all surveys, attitude and opinion polls, questionnaires, and telephone interviews" (DAF, 1996:1). The HQ AFPC/DPSAS survey approval program "is structured to ensure individual responses are kept confidential and no adverse actions will result from an individual's response to an official Air Force survey" (DAF 1996:1). The program is defined by Air Force

Instruction 36-2601 which is also the driving document for instructions and guidelines on how to get a survey approved.

The formal HQ AFPC/DPSAS approval request letter can be found in Appendix D. Following the approval request letter is all the required information requested to be attached to the letter. This information includes answers to questions such as the purpose of the survey, how the survey results will be used, point of contact information, the survey population, how the data will be collected, and finally how often the people will be surveyed (Appendix D – Attachment 2). Finally, located in Appendix F, is the HQ AFPC/DPSAS approval document and reference number.

### 4.2.2 Human Subjects Review Board

The second review process accomplished during this research effort was that of the Human Subjects Review Board. The goal of the HSRB is much like HQ AFPC/DPSAS review process, yet the focus is strictly on the protection of subjects being tested or surveyed. The HSRB, the review committee created from AFI 40-402, was created specifically for the "Protection of Human Subjects" (DAF, 2000:4). The HSRB is responsible for the examination and review of each study, experiment or research project performed within the USAF which includes human subjects. For the HSRB, the driving document is AFI 40-402 which also stands as a supplement for both Title 32, Code of Federal regulations, part 219. Within Title 32 are certain clauses which provide an exemption from the HSRB review process. At the start of this research effort, the survey was submitted to the HSRB for an exemption of the review process under one of these clauses (Reference Appendix F). Specifically, the clause was Code of Federal

Regulations, title 32, part 219, section 101, paragraph (b) (3). Final exemption from the HSRB review process was granted on 22 October 03 and can be seen in Appendix G. The HSRB process was further engaged upon the onset of the telephone interview process which will be discussed later within this section.

### 4.2.3 Comments from GEM 04 Class

The last method of review was from the students that comprise the Graduate of Engineering Management, graduation year 2004 class. This group consists of 22 Civil Engineer officers, each of which is an Air Force Institute of Technology (AFIT) student. This group was selected due to their easy access, knowledge level of the research process, and knowledge level of how various bases within the USAF interact with their local communities. During this review process an e-mail was sent soliciting their support, yet only 9 responded back with comments dealing specifically with the wording of the survey. Upon receipt of the comments, the survey was updated to ensure a clearer and more precise survey instrument.

Though responses were provided from the group of officers, it was not the most appropriate group to pre-test the survey. Even though a group of peers may be easily accessible and have the ability to provide timely responses to a request for aid, there are limitations to this technique that should be mentioned.

First, using a group of peers with the same responsibilities and duties does not allow for a third party perspective of the survey instrument. This means that when the survey was reviewed, a more appropriate group would have been a random selection of individuals unfamiliar with both the research effort as well as the researcher. This group

has a very narrow background (civil engineering) and does not reflect the base populous as a whole.

Second, this group was merely asked to provide comments rather than take the survey themselves. The only true method of deeming a survey's viability is to have the survey taken. A more appropriate method would have been to again send the survey to a group of randomly selected individuals, unfamiliar with the research effort and analyze their responses with those the researcher is expecting.

## 4.3 Survey Distribution and Collection

The next section of this chapter will discuss in detail the chosen methods for selecting and contacting each survey participant, how the survey was distributed as well as the collection methods utilized. The section begins with the focus group selection and contact methods. The base selection method is described next as well as how the survey was transformed into a web-based survey.

### 4.3.1 Focus Group Selection and Contact Methods

The focus group for this exploratory study was the company group officers at two USAF bases. The group was selected through the list of criteria described in chapter three. In order to contact each CGO at the two installations, the Company Grade Officers Council (CGOC) president was contacted via e-mail soliciting his support. The CGOC is a professional organization located at each installation containing members with the ranks of 2d Lieutenants (Lts), 1st Lts, and Captains. The purpose of contacting the

president of each CGOC element is for their direct contact and ease of communication with all the CGOs on their base. After each CGOC president was contacted, an e-mail was sent to the president containing a link to the survey shown in Appendix A. The CGOC president forwarded the e-mail to each CGO's e-mail address contained within their CGOC distribution list.

### 4.3.2 Base Selection

The HSRB prevents the disclosure of the specific installations contacted during this research effort yet some important qualities for selection of each should be mentioned. This section will summarize the specific reasons each installation was chosen.

Each installation chosen for participation in this research effort first had to meet the conditions listed within chapter three. The first condition was that bases to be studied include a military support structure. This was in order to exclude bases that have an entirely civilian workforce**.** Due to many installations within the USAF meeting this condition, the selection of the two bases became merely a choice of which installations would potentially provide the greatest number of responses. The next condition was for chosen installations to include a large surrounding community. Each of these factors was taken into account during the selection of the surveyed bases. They are identified as base X and Y. Base X has over 800 CGOs assigned and base Y has over 400. In addition, each installation is surrounded by a local population of over 100,000 residents. These two factors were critical in assuming a large number of CGOs would participate in the

study as well as have the potential for exchanging information with their surrounding communities.

### 4.3.3 Web Based Survey

The survey was provided to each participant through a link contained within an e-mail described earlier. The link allowed each participant to access the survey over the internet due to the survey being in a web-based format. This meant that participants did not have to write their responses on a hard copy form of the survey and mail them back. Instead, participants merely needed to click or type the appropriate responses to each question. The collection of completed surveys was instantaneous through the technology of the web-based format and each response was contained within a Microsoft Access database located at AFIT. At any time, the researcher had the ability to access the responses by querying the database.

## 4.4 Survey Results

The purpose of this section is to begin the process of describing and analyzing the survey responses. The section starts by introducing the survey response rates which is then followed by an analysis of demographic survey questions, an analysis of various forms of information exchanged, an analysis of methods used to manage information exchanges, and an analysis of co-worker information exchange.

The e-mails sent out to both bases (866 at base X and 459 at base Y) provided the potential for 1,325 survey responses. After eliminating responses that were not filled out

completely or just filled out improperly, only 118 were usable for this study. This means for the overall response rate this method of survey distribution only produced a response rate of 8.9%. The response rate of base X individually produced a rate of 9.7% while base Y only produced a rate of 7.4%. It is important to note that these response rates are conservative. The total numbers above were obtained from each base's respective military personnel flight (MPF). Thus by using the e-mail methodology and technology to distribute the survey there is no way of precisely knowing how many of the individuals included in the count above actually received the survey e-mail. In addition, there is no feasible method of determining just how many CGOs from each base are on-station and present for duty (i.e. not on leave or on temporary duty elsewhere) or have a working e-mail account.

Of the 118 responses, the majority of the respondents came from base X (84 responses) which is what would be expected considering the larger population of CGOs. When the results from base X are combined with base Y (34 responses), the majority came from the rank of 2$^{d}$ Lt. This means, in general, the majority of responses are coming from a population having little experience within the Air Force as officers (less than two years). These results can be seen within Figure 4.1. In addition, to view individual base results refer to Appendix C, Figure C-1 (Base X) and C-2 (Base Y).

The initial data was further examined to reveal that from the 118 usable surveys, half of the respondents had over 4 years of active duty time (Refer to Figure 4.2). These results have been double checked and barring the respondent making a mistake during the survey, the results imply that a majority of the individuals taking this survey are prior service. At the same time, the majority of respondents have less than 12 months at their

current installation (Refer to Figure 4.3). Finally, just over 37% of the respondents have less than 6 months of experience with their current position (Refer to Figure 4.4).

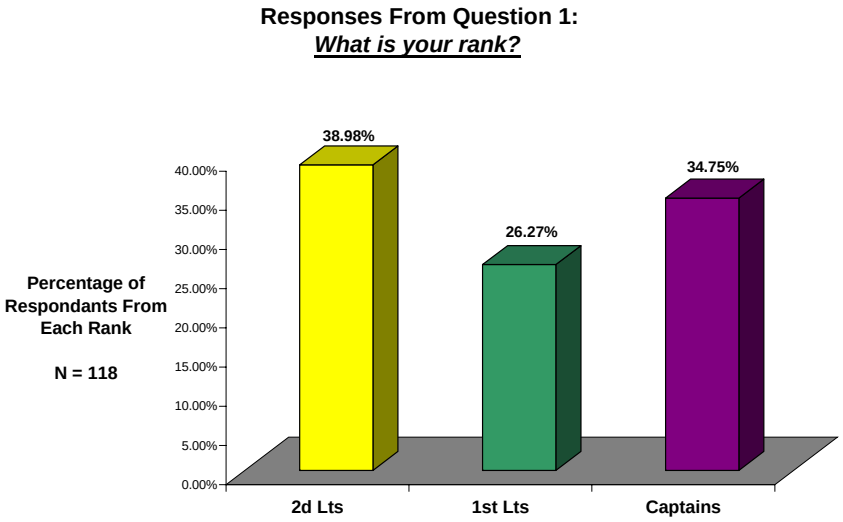
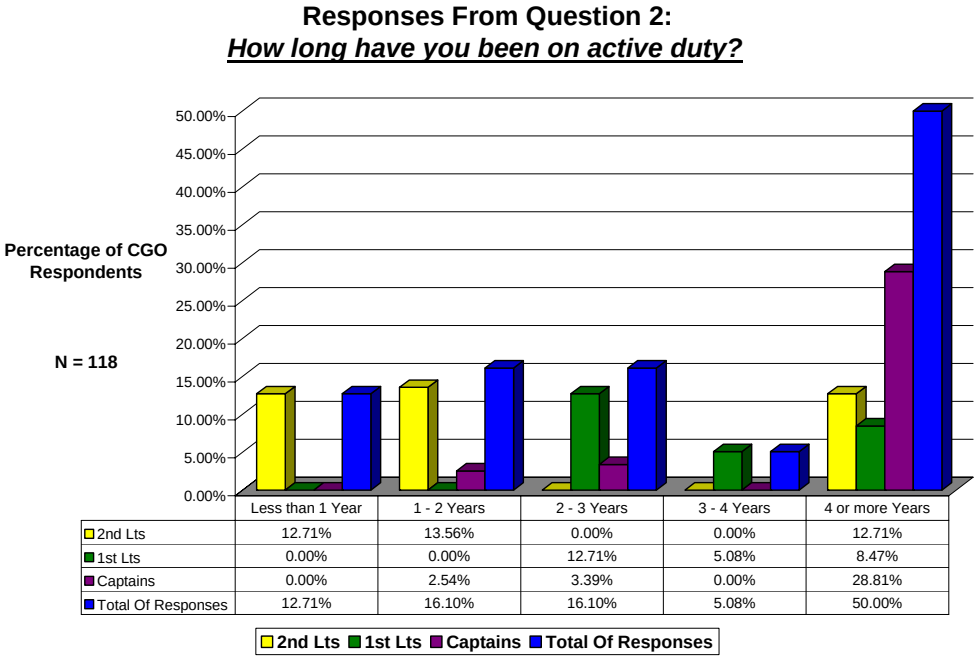


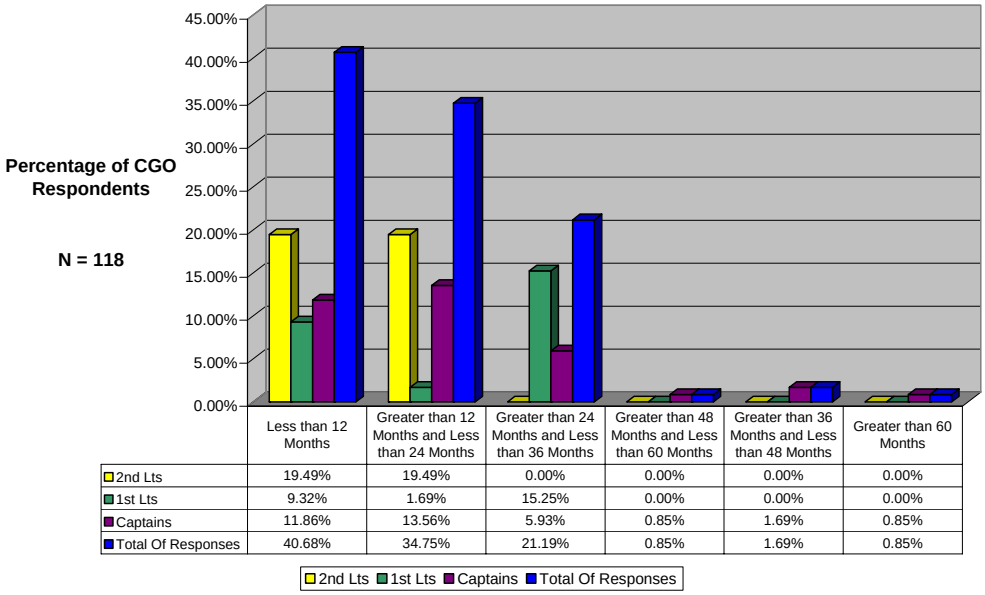

*Figure 4.1: Survey Responses - Question 1*




| | Less than 1 Year | 1 - 2 Years | 2 - 3 Years | 3 - 4 Years | 4 or more Years |
|---|---|---|---|---|---|
| 2nd Lts | 12.71% | 13.56% | 0.00% | 0.00% | 12.71% |
| 1st Lts | 0.00% | 0.00% | 12.71% | 5.08% | 8.47% |
| Captains | 0.00% | 2.54% | 3.39% | 0.00% | 28.81% |
| Total Of Responses | 12.71% | 16.10% | 16.10% | 5.08% | 50.00% |

*Figure 4.2: Survey Responses – Question 2*

**Responses From Question 3:**
**How long have you been at your current installation?**

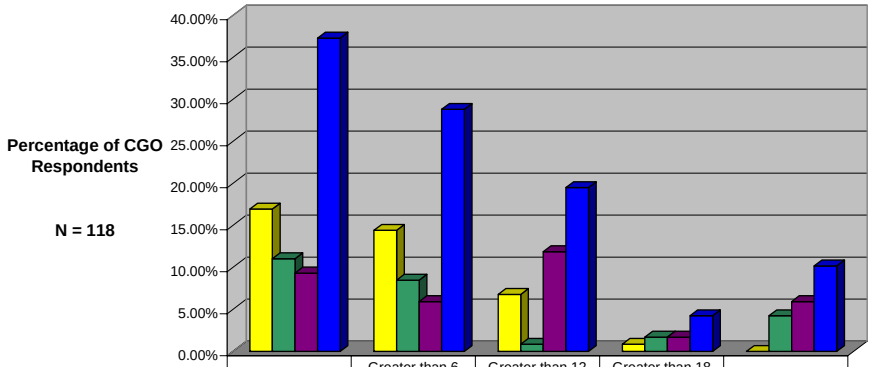



| | Less than 12 Months | Greater than 12 Months and Less than 24 Months | Greater than 24 Months and Less than 36 Months | Greater than 48 Months and Less than 60 Months | Greater than 36 Months and Less than 48 Months | Greater than 60 Months |
|---|---|---|---|---|---|---|
| 2nd Lts | 19.49% | 19.49% | 0.00% | 0.00% | 0.00% | 0.00% |
| 1st Lts | 9.32% | 1.69% | 15.25% | 0.00% | 0.00% | 0.00% |
| Captains | 11.86% | 13.56% | 5.93% | 0.85% | 1.69% | 0.85% |
| Total Of Responses | 40.68% | 34.75% | 21.19% | 0.85% | 1.69% | 0.85% |

2nd Lts 1st Lts Captains Total Of Responses

*Figure 4.3: Survey Responses – Question 3*

**Responses From Question 4:**
**How long have you held your current position?**




| | Less than 6 Months | Greater than 6 Months and Less than 12 Months | Greater than 12 Months and Less than 18 Months | Greater than 18 Months and Less than 24 Months | Greater than 24 Months |
|---|---|---|---|---|---|
| 2nd Lts | 16.95% | 14.41% | 6.78% | 0.85% | 0.00% |
| 1st Lts | 11.02% | 8.47% | 0.85% | 1.69% | 4.24% |
| Captains | 9.32% | 5.93% | 11.86% | 1.69% | 5.93% |
| Total Of Responses | 37.29% | 28.81% | 19.49% | 4.24% | 10.17% |

2nd Lts 1st Lts Captains Total Of Responses

*Figure 4.4: Survey Responses – Question 4*

Comparing these results to the criteria listed in chapter three indicates that 62.71% of those individuals responding to the survey meet the minimum experience

requested. Chapter three refers to the experience of the CGOs for the purpose of getting responses from only CGOs with an apparent experience level high enough to provide authority for survey answers. In addition, it can be seen that a majority of the folks responding to the survey had more than 12 months of time at their current installation. In turn this means that a majority of the individuals responding to the survey met the survey criteria.

Next, the survey probed for the various forms of information exchange that occur on a routine basis. In reviewing the responses to these questions, it was found that of the 118 respondents, 55 exchange information with their surrounding communities. The majority of the exchanges were found to come from the 2d Lts with an average of 38.18%. Figure 4.5, provides the percentage of each rank that was found to exchange information from the 55 respondents.

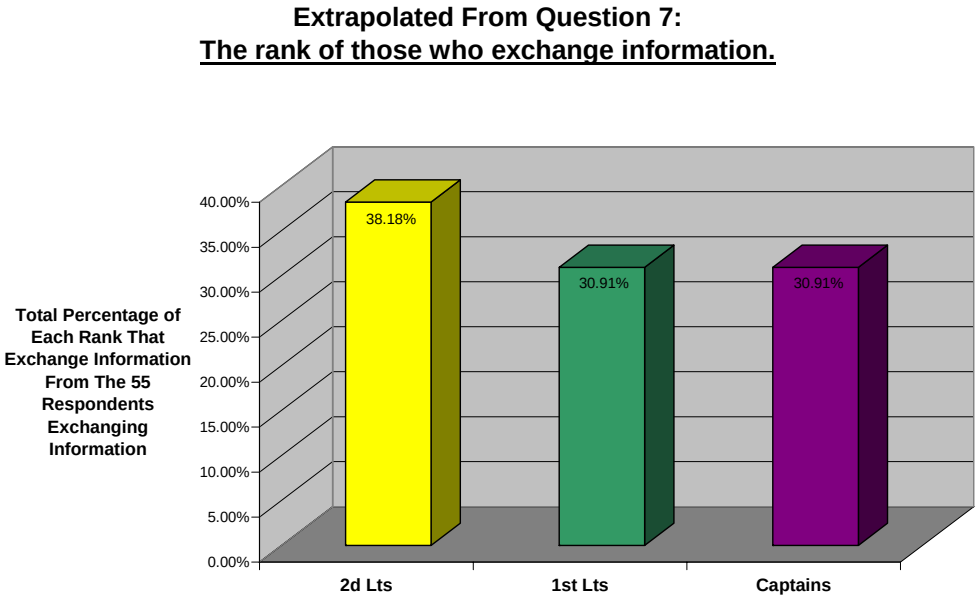
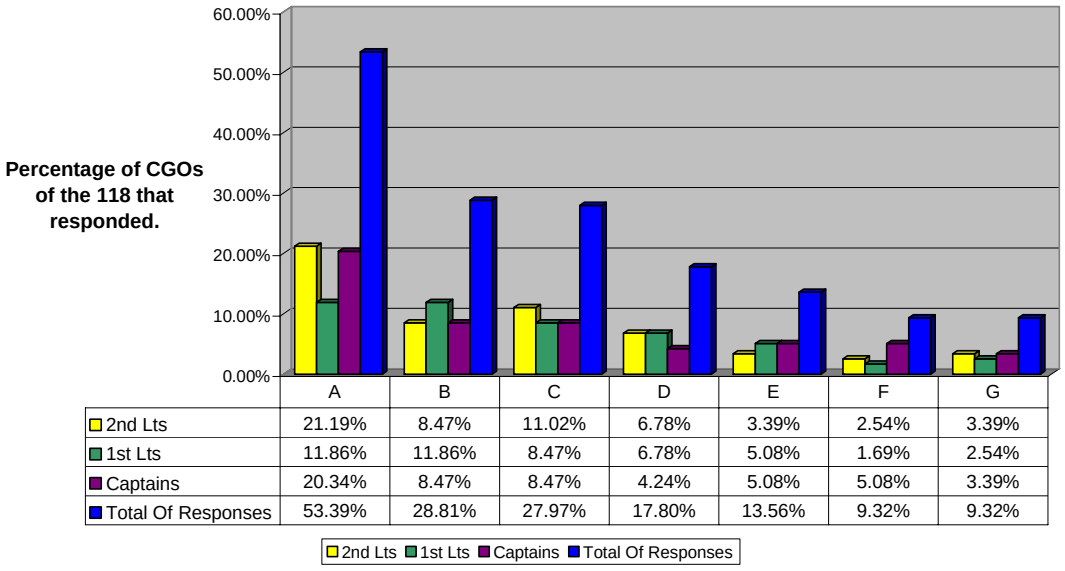



***Figure 4.5: Survey Results – Extrapolated From Question 7***

After discovering the number of CGOs responding 'yes' to exchanging information with surrounding communities, the kinds of exchanges were next examined. It was found that 34 of those 55 CGOs (17.99%) that exchange information do so by disclosing data associated with a current or ongoing project. This is closely followed by the percentage of CGOs exchanging information in support of an upcoming event (17.46%). These findings as well as the number of respondents engaging in other forms of exchanges can be seen on Figure 4.6. The figure is followed by Table 4.1 which provides a legend for Figure 4.6 as well as examples taken from the survey indicating the reason for an information exchange.

**Responses From Question 7:**
**Reflecting on your current job, please check all relevant forms of information exchange associated with this position which occur with the local community.**




| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 2nd Lts | 21.19% | 8.47% | 11.02% | 6.78% | 3.39% | 2.54% | 3.39% |
| 1st Lts | 11.86% | 11.86% | 8.47% | 6.78% | 5.08% | 1.69% | 2.54% |
| Captains | 20.34% | 8.47% | 8.47% | 4.24% | 5.08% | 5.08% | 3.39% |
| Total Of Responses | 53.39% | 28.81% | 27.97% | 17.80% | 13.56% | 9.32% | 9.32% |

***Figure 4.6: Survey Responses – Question 7***

| Bar Graph Letter | Category of Information Exchange |
|---|---|
| A | No Exchange Takes Place With The Local Community |
| B | Disclose Data Associated With A Current/Ongoing Project |
| C | Disclose Upcoming Base Events |
| D | Exchange The Base Map |
| E | Exchange Digital Photography |
| F | An Unlisted Exchange With The Local Community Occurs |
| G | Disclose The Location Of Hazardous Material |

***Table 4.1: Figure 4.6 Legend***

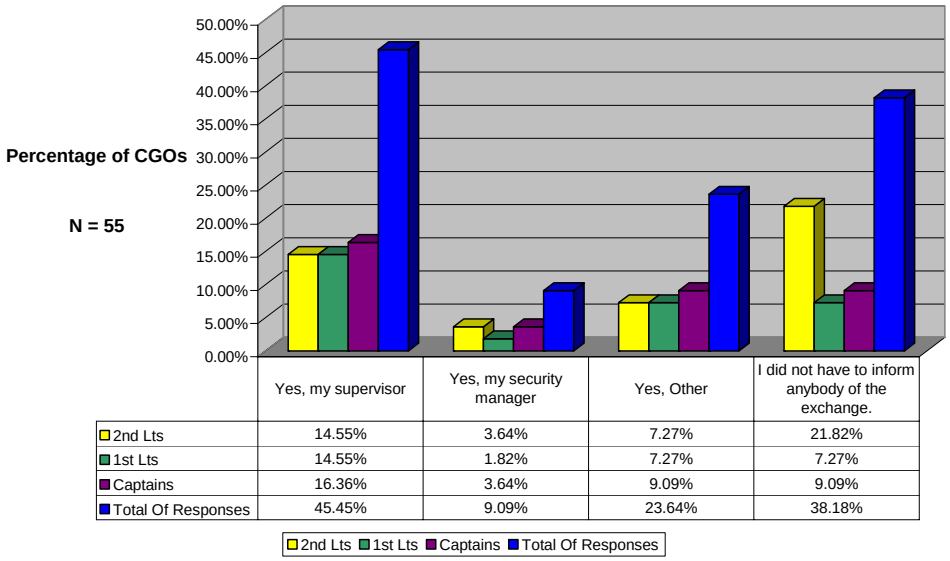
**Examples of reasons for an information exchange[2]**

- When we close roads for flight test missions we generally provide advanced notice [to local authorities indicating the specific] roads [that] fall within the safety footprint of a munitions test. (Fighter Training Squadron – Program Manager)
- Reason for the exchange is coordinating patient care with off base physicians, physical therapists, home health agencies, etc - this happens many times daily (Medical Officer)
- The reason for exchange is to enhance project or provide knowledge on some system. (Developmental Engineer)

The survey next polled the individuals exchanging information in an attempt to discover the number of individuals that must inform somebody an exchange is occurring. The survey responses indicated that of the 55 individuals exchanging information, 45.45% had to inform their superior of the exchange, and 38.18% did not need to inform anyone (Refer to Figure 4.7). In addition, below the figure are examples of individuals who need to be informed of an exchange.

[2] Examples are taken directly from survey responses. The office from which the comment came is indicated in the parenthesis. Individuals providing information are not identified due to privacy act laws and regulations.

**Responses From Question 9:**
**Did you have to inform anybody of any type of information exchange?**




| | Yes, my supervisor | Yes, my security manager | Yes, Other | I did not have to inform anybody of the exchange. |
|---|---|---|---|---|
| 2nd Lts | 14.55% | 3.64% | 7.27% | 21.82% |
| 1st Lts | 14.55% | 1.82% | 7.27% | 7.27% |
| Captains | 16.36% | 3.64% | 9.09% | 9.09% |
| Total Of Responses | 45.45% | 9.09% | 23.64% | 38.18% |

*Figure 4.7: Survey Responses – Question 9*

**Examples of who needs to be informed**

- The Operations Group Commander (Fighter Training Squadron)
- Patient when required by confidentiality laws (Medical Group)
- Base Commander, other agencies involved with the distinguished visitor visit. (Protocol Officer)
- It actually filters from base level through MAJCOM and higher and then is posted more locally (Manpower)

The same 55 individuals, found to be exchanging information, were also asked to respond to a question dealing with the documentation of the information exchange. This question revealed that of the 55 individuals exchanging information, 34 of them or 61.82% did not have to record the exchange in any form. In addition, when the 55 individuals were asked if the exchanges occur over e-mail, it was found that the majority said yes at a 61.82%. The 61.82% of respondents alludes to the fact that CGOs have

adopted the ease and prevalence of e-mail as a method in today's Air Force to accomplish tasks. Both of these results can be viewed graphically by referring to Figures 4.8 and 4.9, respectively.

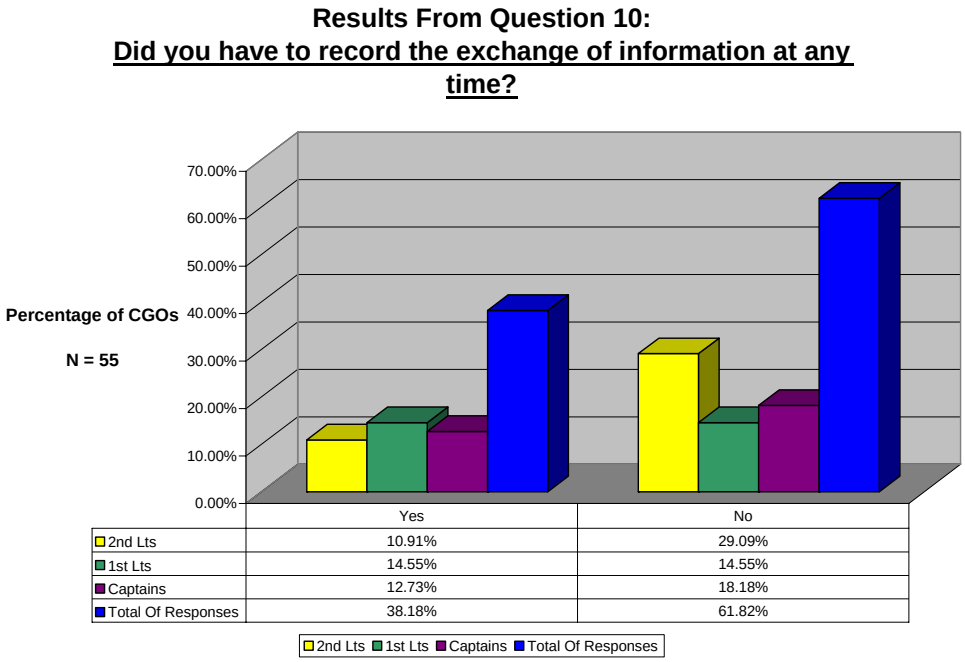



***Figure 4.8: Survey Responses – Question 10***

**Examples of where an information exchange is recorded**

- Documented In the Contract File (Contracting Officer)
- Keep records of information in a file for the DV visit, also on the itinerary at times. (Protocol Officer)
- We store many of our significant events reports and test update letters on servers and a database called LiveLink. (Test Wing – Developmental Engineer)

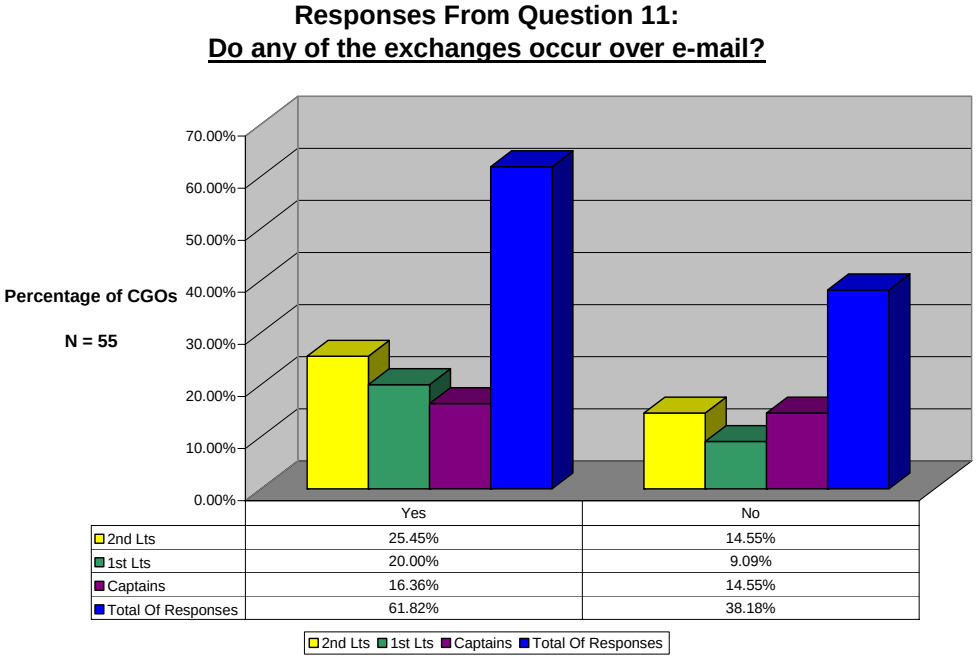



***Figure 4.9: Survey Responses – Question 11***

Finally, each of these questions was again asked in a form that attempted to find the number of CGOs at each base that may have a superior, subordinate or co-worker that exchanges information. Unfortunately, this section of the survey did contain responses that needed to be manually changed due to participants answering questions which should have been skipped. For example, within question thirteen of the survey, participants were asked to indicate whether or not a co-worker exchanged information. In some instances a survey respondent indicated that their co-workers **DO NOT** exchange any form of information. Yet in supporting questions, to be answered by only those who did have co-workers who exchanged information, the participant still provided a response. In addition, at times some respondents who indicated a co-worker exchanges information did not respond to any further questions, disregarding the directions of the survey. Thus the numbers reported below are conservative. In essence, it is possible that some

responses from participants in question 13, where a respondent indicated that their co-workers do not exchange information, could have been improperly completed and more participants than indicated below had co-workers who exchange information. Or, the answers to questions after number 13, required to be completed, were not. To be consistent, the responses to question 13 were used to determine whether to use the rest of the responses from the survey. If a respondent indicated that no co-workers exchanged information, any subsequent responses were purposefully omitted from calculations. If a respondent indicated that a co-worker did exchange information, yet did not fill out the following questions, answers from previous questions were put in their place. For example, one individual indicated that his co-worker exchanged the base map then did not respond to the questions asking if e-mail was used during the exchange or if the exchange had to be recorded. In this case, the answers provided earlier by the CGO himself were repeated within the co-worker questions. This choice was based on the assumption that many individuals within an office tend to have similar tasks and thus would use the same methods of exchanging information.

Once these areas were corrected among the database, the initial findings from the 118 responses were that 43 of the 118 or 36.44% of the responding CGOs claim that a superior, subordinate or co-worker exchanges information with the surrounding community. Figure 4.10 provides a rank breakdown to this question.

CGOs were next asked about the kinds of information exchanges occurring among their co-workers. It was determined that from the 118 CGO respondents, 63.56% or 75 of the 118 co-workers do not exchange information with the local community. 27.12% of co-workers were found to exchange information for the purpose of completing

current/ongoing projects. The other forms of information exchange found among CGO co-workers are seen in Figure 4.11. To clarify Figure 4.11 a legend can be found within Table 4.2. Finally, reasons for information exchanges by co-workers are shown next. When comparing the results from the CGOs themselves to those of their co-workers it can be seen that in both cases the majority of individuals exchange data, information and knowledge for the purpose of a current project. Next, within both groups, it should be noted that base events and the base map are exchanged as well.

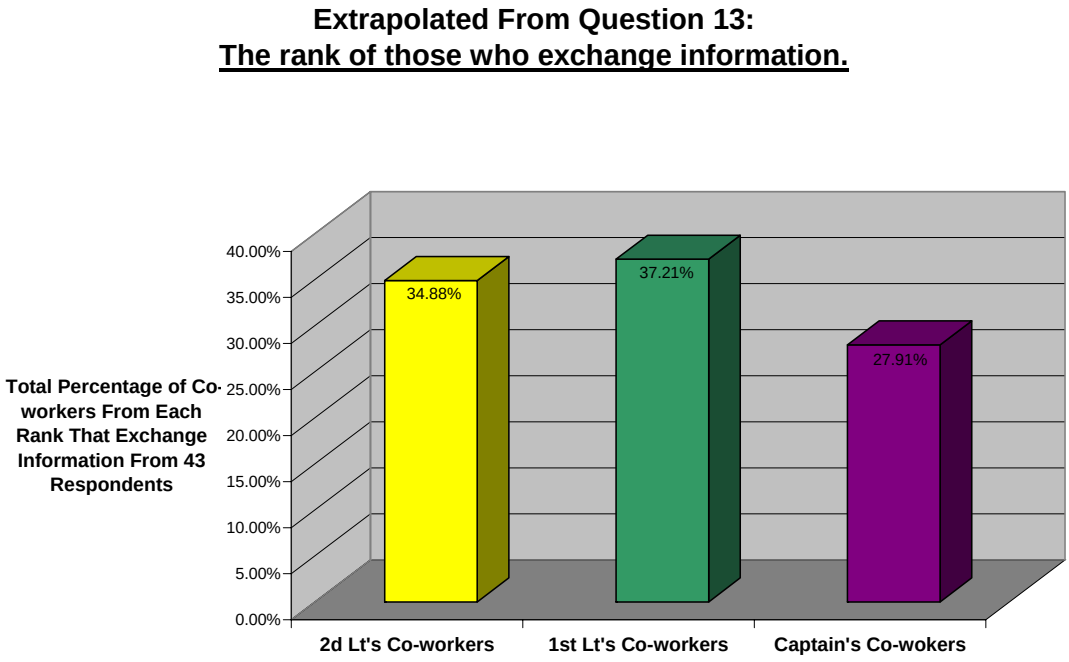
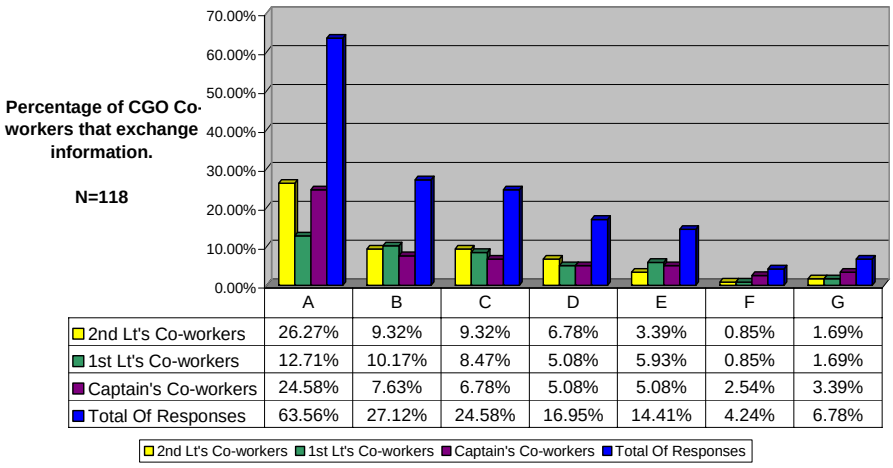



***Figure 4.10: Survey Results – Extrapolated From Question 13***

**Responses From Question 13:**
**Shifting the focus from you to your coworkers, please select the situations where an individual working for you, above you, below you, or just near you may exchange information with the local community.**




| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 2nd Lt's Co-workers | 26.27% | 9.32% | 9.32% | 6.78% | 3.39% | 0.85% | 1.69% |
| 1st Lt's Co-workers | 12.71% | 10.17% | 8.47% | 5.08% | 5.93% | 0.85% | 1.69% |
| Captain's Co-workers | 24.58% | 7.63% | 6.78% | 5.08% | 5.08% | 2.54% | 3.39% |
| Total Of Responses | 63.56% | 27.12% | 24.58% | 16.95% | 14.41% | 4.24% | 6.78% |

*Figure 4.11: Survey Responses – Question 13*

| Bar Graph Letter | Category of Information Exchange |
|---|---|
| A | No Exchange Takes Place With The Local Community |
| B | Disclose Data Associated With A Current/Ongoing Project |
| C | Disclose Upcoming Base Events |
| D | Exchange The Base Map |
| E | Exchange Digital Photography |
| F | An Unlisted Exchange With The Local Community Occurs |
| G | Disclose The Location Of Hazardous Material |

*Table 4.2: Figure 4.10 Legend*

**Examples of reasons for an information exchange**

- To coordinate test information. (Systems Engineer)
- Provide law enforcement officials or members of local emergency management divisions' information if we had a major accident or plan on holding an exercise. (Readiness Officer)
- Providing Hazmat info to applicable environmental compliance agencies (State/Federal) and updating status of special projects being handled by outside contractors. (Maintenance Officer)

Next, the 43 CGOs who have co-workers that exchange information were asked whether or not the exchange occurs via e-mail. The results indicated approximately

74.42% co-workers routinely use e-mail for information sharing purposes (Refer to Figure 4.12). This coincides with the responses of the CGOs and shows the prevalence of e-mail use within the USAF. The results from question 18 are shown next and indicated 51.16% of the 43 CGO co-workers did, in some fashion, record the exchange of information (Refer to Figure 4.13). Comparing this to the responses of the CGOs, more co-workers record an information exchange than do the CGOs themselves.

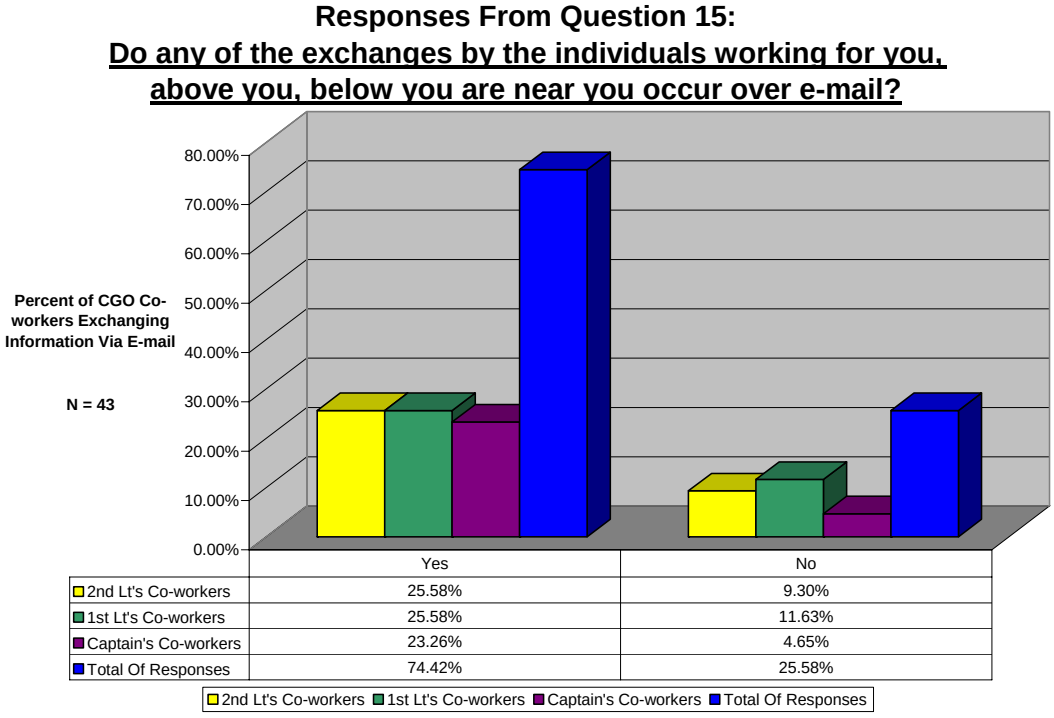
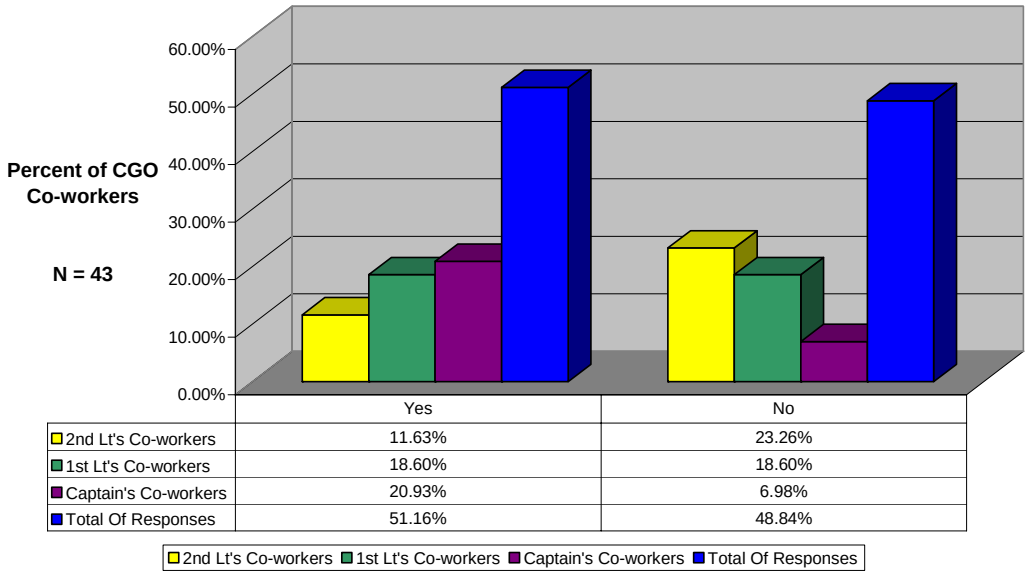



***Figure 4.12: Survey Results – Question 15***

**Responses From Question 18:**
**Did the individuals working for you, above you, below you or near you have to record the exchange of information at any time?**




| | Yes | No |
|---|---|---|
| 2nd Lt's Co-workers | 11.63% | 23.26% |
| 1st Lt's Co-workers | 18.60% | 18.60% |
| Captain's Co-workers | 20.93% | 6.98% |
| Total Of Responses | 51.16% | 48.84% |

2nd Lt's Co-workers 1st Lt's Co-workers Captain's Co-workers Total Of Responses

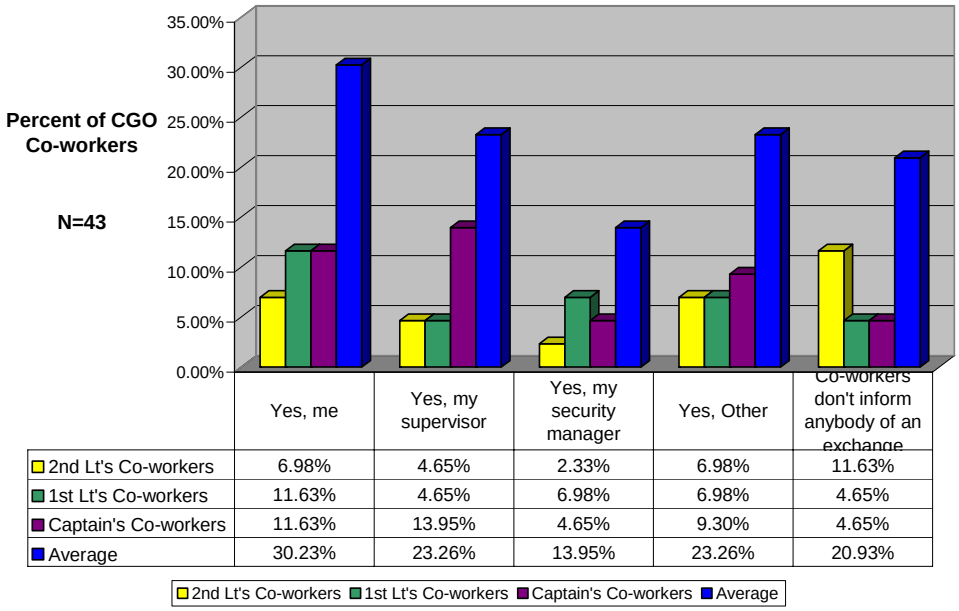
***Figure 4.13: Survey Results – Question 18***

**Examples of where an information exchange by co-workers is recorded**

- Bioenvironmental Log Book kept within the element. (Equipment Maintenance Squadron)
- E-mails, faxes, read receipts, databases, etc. We need to know what was told to who and when. (Wing Executive Officer)
- Explosive Ordinance Disposal (EOD) Reporting System (EOD Officer)

The survey polled the same 43 CGOs with regard to who their co-workers must inform or not inform when an exchange of information occurs. This question resulted in 11.63% of the 43 CGOs reporting that they, the CGOs, need to be kept abreast of any occurring exchange (Refer to Figure 4.14). The difference between the percentage of Captains who must be informed and 2d Lts (6.98%) is probably due to the added responsibility a Captain has compared to a 2d Lt. In many cases, it may be the 2d Lts reporting to the Captains upon the occurrence of an information exchange.

**Responses From Question 17:**
**Do individuals working for you, above you, below you or near you have to inform anyone about the information exchange?**




| | Yes, me | Yes, my supervisor | Yes, my security manager | Yes, Other | Co-workers don't inform anybody of an exchange |
|---|---|---|---|---|---|
| 2nd Lt's Co-workers | 6.98% | 4.65% | 2.33% | 6.98% | 11.63% |
| 1st Lt's Co-workers | 11.63% | 4.65% | 6.98% | 6.98% | 4.65% |
| Captain's Co-workers | 11.63% | 13.95% | 4.65% | 9.30% | 4.65% |
| Average | 30.23% | 23.26% | 13.95% | 23.26% | 20.93% |

***Figure 4.14: Survey Results – Question 17***

Three key features from each base were discovered when viewing the survey data in its entirety. First, it was found that from the two bases selected for this research effort, seven of the same organizations from each base were found to exchange information. These organizations were the chapel, public affairs, the services squadron, the civil engineer squadron, the aircraft maintenance squadron, the maintenance squadron, and the contracting squadron. Second, it was observed that the most common reasons to exchange information were for the purpose of contract discussions with contractors, for public speaking engagements, for event planning, and for public awareness or notification purposes. Third, the most common or general types of information exchanged were found to be the base map, event details, project/contractual related data and information, federally required data, and interesting newsworthy stories.

Finally, the survey approach used in this research effort contained some limitations. First, the survey itself did not aid the researcher in uncovering all the areas where information exchanges exist, namely it only focused on the positions which CGOs hold a job. In essence, there are numerous jobs which interact and exchange information with surrounding communities (Small Business Office, Base Historian,…etc.) yet a CGO does not work there. Because of this limitation, the survey itself was not able to capture the various information exchanges that occur from these offices. Second, the survey did not provide a large number of specific examples where information is exchanged. Finally, due to the nature of a written survey instrument, participants do not always provide all the information required. It is because of these limitations that the need for telephone interviews was based upon. The next section of this chapter will discuss in detail the telephone interview development, process and results.

## 4.5 Telephone Interview Process and Results

This section details the efforts to further investigate the survey responses by personally contacting some of the respondents. First, the process for selecting the individuals for telephone interviews is summarized. Then the protocol for contacting the people and the interview process is discussed. Finally, results from the telephone interviews are documented.

### 4.5.1 Telephone Interview Group Selection

To develop the list of individuals for telephone interviews it was necessary to develop a new list of criteria. This new criteria was not initially produced during the development of the methodology in part because the researcher did not know how many responses would come back or the form the responses would appear in. It was only after the initial exploratory survey results were retrieved that new criteria were developed. The criteria for respondents to be personally interviewed are:

1) Had to have exchanged some form of information.

2) The reason for the exchange and what is being exchanged must not be obvious (i.e. not specifically identified within the web based survey).

3) Must have voluntarily provided some form of contact (i.e. their name, phone number…etc.).

4) Must have held their position a minimum of 6 months. Should a participant be the only contact for a particular career field, the 6 month limitation was waived.

After applying these criteria to the survey responses, the telephone interview list was limited to 39 individuals. Next, methods used to contact each individual as well as record their responses are discussed.

### 4.5.2 Telephone Interview Protocol

The first step of the telephone interview process was to contact the individual. This was achieved using both e-mail and telephone. To begin, each of the 39 individuals identified from the criteria above was contacted via e-mail requesting a time and date to

conduct the telephone interview. The e-mail address was found using the USAF global address listing which also provided the phone number of each individual to be contacted. Once the individual was contacted, an appointment was set up for the purpose of the interview to take place. Prior to the interview, a customized list of questions for each subject was developed from those listed within Appendix H. Each of these questions is the same as those used during the written survey and were used to begin the interview process. During telephone interviews, after a participant was asked the same questions as that of the written survey, the interviewer provided follow up, individually tailored, questions in order to clarify any ambiguous or confusing response. In addition to the list of questions being used as a guideline for the interview, they were also used as format for taking notes. During each interview, as the questions were asked, notes were written directly on the list of questions. From the notes, a detailed transcript was prepared that identified the type of organization the respondent works in and summarized the additional information gained during the interview. The results from each interview are in the next section.

### 4.5.3 Telephone Interview Results

This section will provide the results of each telephone interview conducted during the research effort. In all, out of 39 possible interviews, only 18 were conducted due to redundant interview responses, a good subject cross section present within the 18 interviews, and time constraints. Each interview transcript below includes the organization the respondent works in, the types of information exchanges that occurred,

reason for the exchange, how the exchange was or was not recorded, and examples provided by the subject during the interview process.

***INTERVIEW NUMBER ONE***

**INTERVIEWED:** Public Affairs Officer

**FROM:** Base X

**INFORMATION EXCHANGE DETAILS:** This position is part of the wing staff and information is exchanged daily for the purpose of "gaining public trust and to promote the Air Force mission[3]." Information exchanges required by this position take place in many forms including exchanging the base map with base visitors, disclosing data for current/ongoing projects, exchanging digital photography, disclosing the location of hazardous material, providing surrounding community members with information specific to upcoming base events, and educating the public about base realignment and closing (BRAC) procedures. The base map comes in numerous forms, each being tailored to the specific need of the visiting individual. Maps for the Public Affairs Officer are generated within their own graphics department and examples are shown in Figure 4.15. One last responsibility of the public affairs section is to be the reporting agency of the base when a hazardous material spill or accident occurs. When a mishap takes place, the public affairs officer and staff are responsible for reporting the location of hazardous materials.

[3] This is a direct quote from the individual interviewed. The quote is not able to be attributed to this individual since it could potentially identify the individual providing the information.

**INFORMATION EXCHANGE RECORDS:** Each of the various forms of information exchange are both recorded and reported as a matter of standard procedures within the office and responsibility. Each exchange with the community is documented in a log book for the purpose of continuity and to provide an easier method of tracking staff accomplishments when the need to recall noteworthy activities arises (i.e. performance reports, awards, decorations…etc.).

**INFORMATION EXCHANGE NOTIFICATION:** Due to the position being a part of the wing staff, the public affairs officer is responsible for reporting to the wing commander and does so routinely.

**INFORMATION EXCHANGE EXAMPLES:** A specific example of a current project mentioned by the interviewed CGO was the exchange of engines for the aircraft assigned from an older model to a newer model. Another example provided was a recent training opportunity the base operational flying wing was allowed to partake in with another country. Both exchanges of information are routinely disclosed during base tours which often include a tour of the engine shop. One last example of information exchange discussed is the exchange of digital photography with local media organizations who are producing stories specific to the base and its employees or activities. During this example, the photos exchanged were in reference to a recent air show the base hosted.

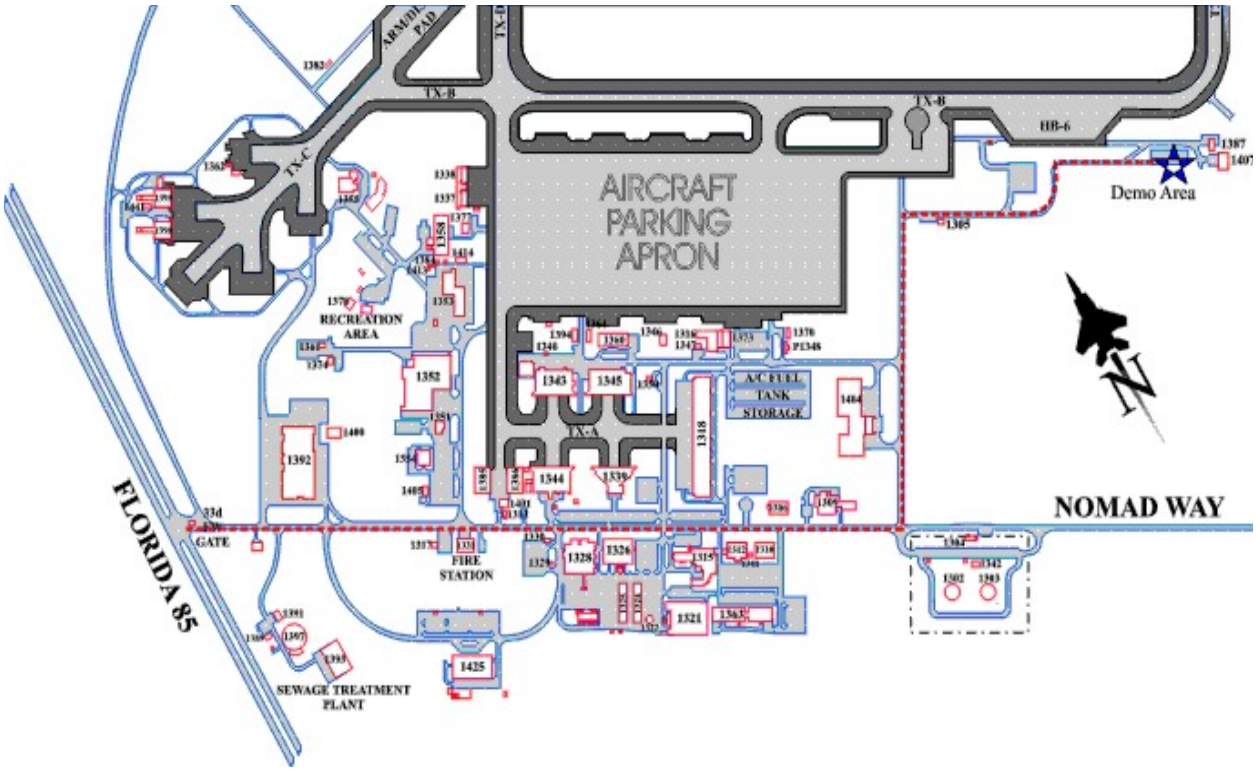



***Figure 4.15: Example of Base Map Created by Public Affairs Graphics Office***

**CO-WORKER INFORMATION EXCHANGE:** Lastly, from this interview it was determined that due to the pubic affairs office employees each having similar job descriptions, the information exchanges which the public affairs officer was responsible for also were the responsibility of office co-workers.

***INTERVIEW NUMBER TWO***

**INTERVIEWED:** Officer in Charge (OIC) of the Programs and Resources Flight

**FROM:** Base Y

**INFORMATION EXCHANGE DETAILS:** This flight falls within the Maintenance Group and routinely exchanges information in the form of disclosing data for current/ongoing projects and disclosing the location of hazardous materials. When

disclosing data for current/ongoing projects, the OIC of the Programs and Resources Flight is often dealing directly with off base organizations with respect to construction and vehicle maintenance matters. Specifically, this position is responsible for the oversight of construction projects occurring directly for the benefit of the organization and for reporting any problems with the project to the base civil engineer and contracting offices. Other interaction with off base organizations occurs in the form of soliciting quotes for vehicle maintenance requests. The interviewee also provided the information that routine inspections are performed by federal and base authorities to ensure all hazardous materials being used within this organization are stored and maintained properly. During these inspections, a base map is often referenced in order to show where the hazardous materials are being stored. Upon completion of the inspections, the base map is then given back to the OIC.

**INFORMATION EXCHANGE RECORDS:** There is no written policy for any exchange to be recorded in any fashion. Though there is no policy enforcing the recording of any information exchanges, the Programs and Resources Flight OIC does require notification from his subordinates. This notification is in order for the OIC to properly update the commanding officer as well as use the information for position continuity.

**INFORMATION EXCHANGE NOTIFICATION:** It was also noted that at no time is there a need or requirement for the OIC of the Programs and Resources Flight to inform another individual of any information exchange. However, the officer does have the requirement of updating the commanding officer, and thus requires all subordinates to send notification of any information exchange.

**INFORMATION EXCHANGE EXAMPLES:** None obtained.

**CO-WORKER INFORMATION EXCHANGE:** Many of the interviewee's co-workers routinely interact on his behalf with the same groups (local contractors and federal authorities).

***INTERVIEW NUMBER THREE***

**INTERVIEWED:** The Deputy Flight Commander for the Communications Help Desk

**FROM:** Base X

**INFORMATION EXCHANGE DETAILS:** This position falls under the Communications Squadron. This position has no direct contact with individuals located within the surrounding community concerning the primary mission. However, the interviewee did have significant contact with outside organizations for the accomplishment of an additional duty.

**INFORMATION EXCHANGE RECORDS:** None Required

**INFORMATION EXCHANGE NOTIFICATION:** None Required

**INFORMATION EXCHANGE EXAMPLES:** During air show planning, the officer was responsible for various functions on the base which required interaction with local agencies. In order to communicate effectively with individuals within the surrounding community with respect to the air show, the exchange of a base map often occurred. In this case, the base map is provided through a local information management system called the Executive Management Information System (EMIS), located on the base intranet, which all individuals on base have access to.

**CO-WORKER INFORMATION EXCHANGE:** None Discussed

***INTERVIEW NUMBER FOUR***

**INTERVIEWED:** A Test Engineer Tactical Communications Test Flight

**FROM:** Base X

**INFORMATION EXCHANGE DETAILS:** This position which falls under the Test Wing located at Base X has responsibilities specifically dealing with testing tactical communications. In order to complete the tasks associated with this position, sophisticated testing equipment is utilized. In fact, this testing equipment is the source of numerous interactions with outside agencies.

**INFORMATION EXCHANGE RECORDS:** During base visits by foreign nationals, the Tactical Communications Test Flight records each visit within its own security database. These records are used to clear visiting individuals as well as track how often visits occur.

**INFORMATION EXCHANGE NOTIFICATION:** During base visits from foreign nationals, the base Foreign Disclosure Office is notified and often provides guidance on security as well as documents the details of the visit.

**INFORMATION EXCHANGE EXAMPLES:** On numerous occasions, this position has been associated with base visits which have focused on the advanced testing equipment. The base visits have come from not only residents of the surrounding community but from other nations as well. It was found during this interview that it is common for various North Atlantic Treaty Organization (NATO) countries to send visitors to Base X for the purpose of viewing its testing capabilities. Finally, during each base visit, it is also common for a base map to be provided for each visitor. An example

of the base map, obtained from EMIS, is shown in Figure 4.18 (This map has been shrunk).

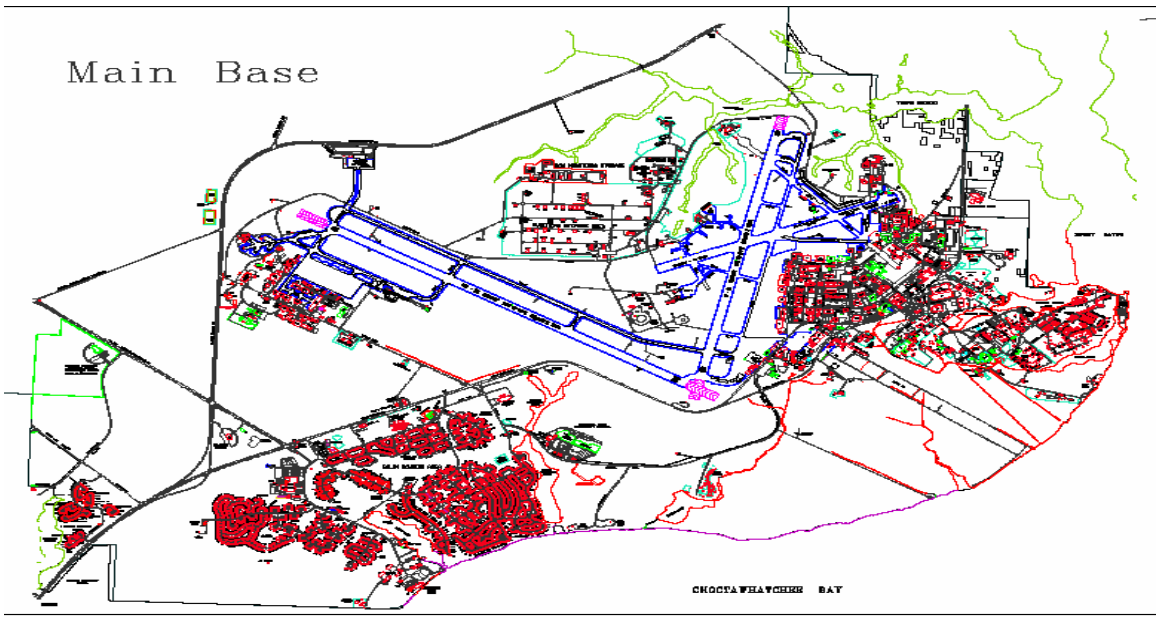



***Figure 4.18: Example of Base X Map***

**CO-WORKER INFORMATION EXCHANGE:** Due to many other individuals within the Tactical Communications Test Flight having the same base visit duties as the Test Engineer interviewed, similar forms of information exchanged were found occurring among flight co-workers.

***INTERVIEW NUMBER FIVE***

**INTERVIEWED:** Contracting Officer

**FROM:** Base Y

**INFORMATION EXCHANGE DETAILS:** This position, which falls under the Mission Support Group, often interacts with the local community in an effort to obtain

resources necessary to carry out the specific base mission. This position is located within the Acquisitions Flight and is responsible for incidental purchases.

During the interview, the topic of disclosing the location of hazardous materials was also discussed. Due to the nature of many materials being used during the initial construction of Base Y's facilities, the contractors may come in contact with hazardous materials during the course of their work on base. Thus, the contractors must be made aware of any hazardous materials they may come in contact with around their place of work as well as the dangers associated with them.

One last area where information is often exchanged to the surrounding community is at contractor fairs. At Base Y, two big contractor fairs occur each year where the public (contractors) is welcome to come learn about how to be selected to perform work for the USAF. During these fairs, upcoming projects are also discussed allowing attendees to become familiar with the kinds of projects available on base. This interview also provided details of other projects conducted during the officer's time within other elements of the Contracting Squadron. It was explained that during his time within the Construction Flight, base maps as well as other detailed drawings were often provided to local and national contractors for the purpose of developing an estimate of the defined work.

**INFORMATION EXCHANGE RECORDS:** For the purposes of managing each contract, information exchanges required to be recorded in a contract folder. These records are also used should any legal issue come from the contractual agreement.

**INFORMATION EXCHANGE NOTIFICATION:** No other individual required notification during routine exchanges of information.

**INFORMATION EXCHANGE EXAMPLES:** Two examples provided for this research project were a 2x2x8 concrete block used for targeting and an overhead shade used during time of rest and relaxation. For each of these purchases, a digital image was provided to multiple companies as an example of the product wishing to be purchased. Figure 4.19 below is the digital image of the block and 4.20 is the digital image of the sunshade.

***Figure 4.19: Example of digital photograph of a concrete block by Contracting Officer***

***Figure 4.20: Example of digital photograph taken of a sun shade by a Contracting Officer***

**CO-WORKER INFORMATION EXCHANGE:** Due to many other individuals within the Contracting Squadron having the same responsibilities of the Contracting Officer,

similar forms of information exchanged were found occurring among squadron co-workers.

***INTERVIEW NUMBER SIX***

**INTERVIEWED:** Contracting Officer

**FROM:** Base Y

**INFORMATION EXCHANGE DETAILS:** The specific location where information is routinely exchanged with the bases' surrounding community and national community is the FedBizOpps web site http://www.fedbizopps.gov. This site is:

> the single government point-of-entry (GPE) for Federal government procurement opportunities over $25,000. Government buyers are able to publicize their business opportunities by posting information directly to FedBizOpps via the Internet. Through one portal - FedBizOpps (FBO) - commercial vendors seeking Federal markets for their products and services can search, monitor and retrieve opportunities solicited by the entire Federal contracting community. (fedbizopps.gov, 17 Dec 03)

According to the contracting officers, most of the solicitation packages for construction projects allow for base maps to be issued, as well as many other electronic detailed drawings. These maps are provided for local as well as national contractors to know precisely where the work on base is to be performed.

Other than the initial information exchanges that originate from the FedBizOpps web site and the various aspects of the project solicitation process, the Contracting Officer also exchanges information throughout the course of a construction project. These exchanges regularly occur between the Contracting Officer and the various contractors conducting business on base. The exchanges come in numerous forms to

include project updates aided by digital photography, project funding updates, or merely clarification regarding ongoing projects using the previously mentioned drawings.

**INFORMATION EXCHANGE RECORDS:** Each exchange between the Contracting Officer and contractor is recorded within the project file in accordance with federal regulations. The main purpose of these is to manage the project but they are also used to yet aid the government in its own defense should a problem arise with respect to the project.

**INFORMATION EXCHANGE NOTIFICATION:** No other individual required notification during routine exchanges of information.

**INFORMATION EXCHANGE EXAMPLES:** The interview discussion provided two distinct examples where information exchanges can occur. The first example was a construction project installing a high expansion foam fire suppression system. In order for this project to become a reality, numerous drawings/building schematics were required to be provided to any company wishing to compete for the job. The first drawing needed was a base map indicating the exact facility which the work was to take place in (Refer to Figure 4.21). Next, a fire protection site plan, a fire protection equipment room plan, a fire protection sprinkler room plan, as well as five other plans were provided, each of which was critical to the success of the project. The second project discussed was for a new training facility being constructed on base. For this project, again, a map of the base was provided to all those interested in competing for the project as well as all necessary drawings associated with the project.

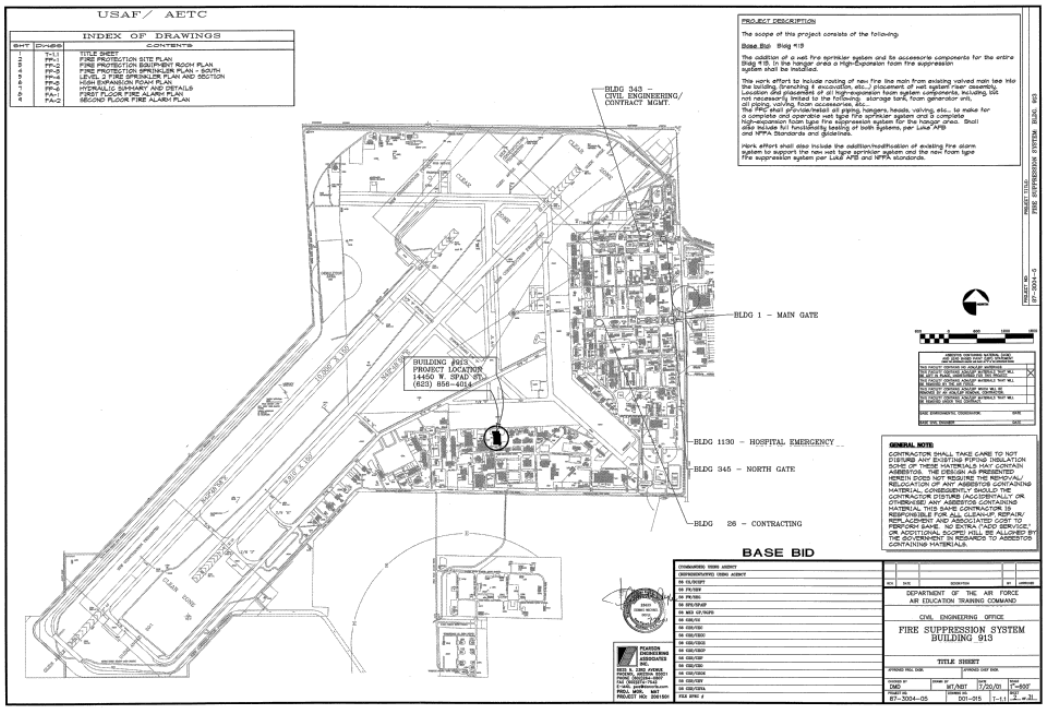



***Figure 4.21: Base Map Provided and Used By a Contracting Officer***

**CO-WORKER INFORMATION EXCHANGE:** Lastly, just like the previously interviewed Contracting Officer, it was discovered that due to the Contracting Office employees each having similar job descriptions and duties, information exchanges which the Contracting Officer was responsible for also occurred routinely with co-workers.

***INTERVIEW NUMBER SEVEN***

**INTERVIEWED:** Systems Safety Officer

**FROM:** Base X

**INFORMATION EXCHANGE DETAILS:** It is the responsibility of this officer and his co-workers to ensure each weapons systems within the USAF is safe to use. During the interview, it was discussed that many times government contractors come to the Systems Safety Center in an effort to have their systems reviewed and approved with

regards to safety. During these efforts, exchanges occur in the form of system schematics. The reason for many of these exchanges is mainly for the benefit of the government contractor. Once a system is certified for use by the USAF, the contractor can then attach that qualifying factor to their system, which often aids them in selling the system to foreign nations.

**INFORMATION EXCHANGE RECORDS:** There is no requirement for this officer to notify another individual that an exchange is occurring, yet the officer does keep track of exchanges via e-mail for continuity purposes.

**INFORMATION EXCHANGE NOTIFICATION:** None Required

**INFORMATION EXCHANGE EXAMPLES:** One example this officer provided included reviewing schematics for newly acquired explosive ordinance disposal robots.

**CO-WORKER INFORMATION EXCHANGE:** Many other individuals within this office have the same responsibilities and thus also exchange information.

***INTERVIEW NUMBER EIGHT***

**INTERVIEWED:** Operations Analyst Officer

**FROM:** Base X

**INFORMATION EXCHANGE DETAILS:** This officer, who works under the Reports and Analysis section of the testing squadron, is responsible for developing, planning and executing of all aspects of operational tests associated with the assigned airframe. During each phase of the testing process, this officer often exchanges data with military organization located off base. Due to the organizational structure of this officer's chain of command, many of her co-workers or testing counterparts are located at other USAF

installations. Because of the dispersed nature of organizational structure, the officer is forced to exchange information off base.

**INFORMATION EXCHANGE RECORDS:** Exchanges are not required to be recorded.

**INFORMATION EXCHANGE NOTIFICATION:** At no time is there a need or requirement to notify another individual that an exchange is occurring, and this is mostly due to the information not being classified. In contrast, during the interview it was additionally discussed that should a need arise where the officer is required to exchange test data to a civilian, approval would have to be granted by the Wing Commander.

**INFORMATION EXCHANGE EXAMPLES:** None Obtained

**CO-WORKER INFORMATION EXCHANGE:** Co-workers from this office often exchange information for the same purposes as the interviewed officer.

***INTERVIEW NUMBER NINE***

**INTERVIEWED:** Chief, F-15 Program Manager

**FROM:** Base X

**INFORMATION EXCHANGE DETAILS:** Often this officer or a co-worker must notify local law enforcement when an ammunition test is going to take place. Due to the layout of this USAF base, two major highways are in close proximity to areas where testing aircraft, carrying live ammunition, routinely fly. In fact, during some instances the aircraft fly directly over the major highways. Because of the danger associated with the testing process and the aircraft carrying live ammunition, local law enforcement must be notified for the purpose of closing down the major highways for the protection of

traveling civilians. This officer and his co-workers are responsible for notifying the local officials within 48 hours of a test occurring. In addition, any time an aircraft assigned to the Base X flying wing is used for testing purposes the officer must notify the Operations Group commander. This is due to the Operations Group commander having sole responsibility for the safety of aircraft under his command.

**INFORMATION EXCHANGE RECORDS:** Exchanges are not required to be recorded.

**INFORMATION EXCHANGE NOTIFICATION:** As mentioned previously, during testing, the Operations Group commander is required to be notified when a test is to take place. During these notifications all aspects of the test are discussed to include the notification of local law enforcement officers.

**INFORMATION EXCHANGE EXAMPLES:** None Obtained

**CO-WORKER INFORMATION EXCHANGE:** Co-workers from this office often exchange information for the same purposes as the interviewed officer.

***INTERVIEW NUMBER TEN***

**INTERVIEWED:** Chaplain

**FROM:** Base X

**INFORMATION EXCHANGE DETAILS:** This position does not routinely exchange information with the surrounding community due to the Chaplain being responsible to the spiritual well being of base members and not off base members. Even though this is the case, this Chaplain has exchanged biographical information. Upon the Chaplain coming to Base X, it became apparent that she was among a small group of female ordained

Episcopalian ministers. Because of this rare attribute, she was asked to provide a brief "profile in religion" for the local community. The only other form of information exchange associated with the Chaplain was the announcement within local civilian church bulletins regarding events at the base hospital. These events included worship times, Communion times, and Sunday school times. The purpose of placing announcements within civilian church bulletins was for the benefit of those military members attending local civilian churches.

**INFORMATION EXCHANGE RECORDS:** None Required

**INFORMATION EXCHANGE NOTIFICATION:** The Chaplain was not required to notify another individual or record the exchange of information with the local community.

**INFORMATION EXCHANGE EXAMPLES:** None Obtained

**CO-WORKER INFORMATION EXCHANGE:** Other Chaplains from this office often exchange information for the same purposes as the interviewed officer.

***INTERVIEW NUMBER ELEVEN***

**INTERVIEWED:** Chaplain

**FROM:** Base Y

**INFORMATION EXCHANGE DETAILS:** This interview demonstrated that the Chaplain position is one that does not routinely exchange information with the surrounding community. At times though, information exchanges are required from this position in order to set up activities occurring on base.

**INFORMATION EXCHANGE RECORDS:** The Base Y Chaplain is not required to record any form of information exchange.

**INFORMATION EXCHANGE NOTIFICATION:** The Base Y Chaplain is not required to notify another individual of the information exchange.

**INFORMATION EXCHANGE EXAMPLES:** At times, the best method of taking care of base member's spiritual well-being is to provide off base entertainment. During a recent event conducted at Base Y, a popular Christian band was asked to play for military members. In addition, the event was sponsored by a local fast food establishment. Information was exchanged with both of these organizations for the purposes of event planning. The information came in the form of providing base location as well as event location. One last example of information being provided to the local community is in order to invite local city officials to the National Day of Prayer Breakfast.

**CO-WORKER INFORMATION EXCHANGE:** Other Chaplains from this office often aid in setting up various activities and thus, exchange information for the same purposes as the interviewed officer.

***INTERVIEW NUMBER TWELVE***

**INTERVIEWED:** Protocol Officer

**FROM:** Base Y

**INFORMATION EXCHANGE DETAILS:** This individual is responsible for setting up, planning, and co-coordinating every aspect of a distinguished visitors (DV) visit. In addition, this officer is responsible for all formalities associated with military ceremonies (i.e. change of command, dining in…etc.). During the interview, it was discovered that

this individual not only interacts with DVs visiting the base, but with local establishments as well. For example, it is common for a DV to be placed in lodging off base when on base facilities become full. In turn, this requires the Protocol Officer to interact with off base lodging facilities, ensuring the distinguished visitor obtains the required lodging facilities. In addition, this officer often coordinated dinner events off base which requires the Protocol Officer to interact and exchange various forms of information with the off base dining facility. In most cases this information includes a guest list, time and date, special requirements of the event guests, as well as how the event will be paid for. In addition, due to the nature of this officer's position and the interaction she has with DVs, the Protocol Officer is often called on to provide a base map as well. Lastly, each visitor coming to the base usually has a customized itinerary developed in order to keep the visit on schedule. These itineraries are not exchanged with a surrounding community but show a form of information management practiced within the Protocol Office.

**INFORMATION EXCHANGE RECORDS:** During the interview, it was discovered that each itinerary created is stored within a file cabinet as well as electronically. The purpose of these records is for continuity. The protocol officer is responsible for ensuring that upon a follow up visit by a DV, the sites visited previously are not visited again (unless specifically requested by the DV). This ensures the DV gains a greater understanding of the base operations by not viewing one aspect of the base each and every visit.

**INFORMATION EXCHANGE NOTIFICATION:** The Protocol Officer is often required to update the Wing Commander on the status of a DV visit. In doing so, the Protocol Officer notifies the Wing Commander of any information (i.e. map) that has

been provided to the DV. These procedures are followed to ensure proper customs and courtesies for the DV and the visit

**INFORMATION EXCHANGE EXAMPLES:** The maps provided to visiting distinguished guests are shown within Figure 4.22 and 4.23. Custom maps from this office are often created for a particular use from the detailed map shown in Figure 4.23.

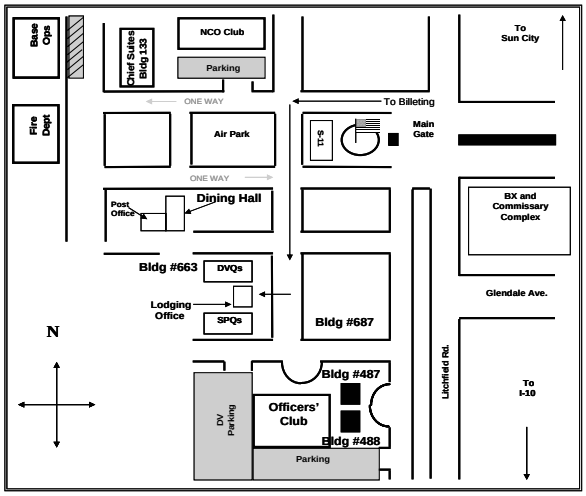



***Figure 4.22: Map Showing the Directions to the Base Y Lodging Facilities Provided by the Base Y Protocol Officer***

***Figure 4.23: Detailed Base Map Used By Protocol Officer at Base Y To Create Custom Maps for Distinguished Visitors Needs***

**CO-WORKER INFORMATION EXCHANGE:** Like many offices previously mentioned, it was discovered that due to the protocol office employees each having similar job descriptions and duties, information exchanges which the Protocol Officer was responsible for also occurred routinely with co-workers.

***INTERVIEW NUMBER THIRTEEN***

**INTERVIEWED:** Officer In Charge of the Aircraft Radio Maintenance Flight

**FROM:** Base X

**INFORMATION EXCHANGE DETAILS:** A responsibility of this officer is to provide public address (PA) coverage of any event on base. Although this is a duty assigned to this flight, as well as numerous other communications elements within the USAF, training on the PA equipment is not provided. Thus, this officer has taken on the task of obtaining training for troops under his command through local PA equipment vendors. In order to make this a reality, the local vendors often ask details of the events the PA equipment is used in which is then provided by the officer.

**INFORMATION EXCHANGE RECORDS:** The information exchanges were not recorded in any fashion.

**INFORMATION EXCHANGE NOTIFICATION:** There is not a requirement to notify another individual of the exchange.

**INFORMATION EXCHANGE EXAMPLES:** None Obtained

**CO-WORKER INFORMATION EXCHANGE:** Co-workers were not discovered exchanging the same information or any other form of information.

***INTERVIEW NUMBER FOURTEEN***

**INTERVIEWED:** Project Engineer

**FROM:** Base X

**INFORMATION EXCHANGE DETAILS:** This officer, working under the Lethal Strike Systems Program Office, often exchanges information with regards to systems being worked on through briefings conducted at community events.

**INFORMATION EXCHANGE RECORDS:** Due to the entire organization having played a part in preparing the briefing, there was no need to record the information exchange.

**INFORMATION EXCHANGE NOTIFICATION:** As with the recording of the information exchange, many other individuals throughout this organization played a part in preparing the briefing. Thus, other than the local security manager, there was no need to notify another individual of the information exchange.

**INFORMATION EXCHANGE EXAMPLES:** A recent example provided was at an air show where the officer briefed and provided un-classified details of the Joint Air To Surface Standoff Missile (AMG 158). The briefing was provided to an air show audience of over 100,000 and included both a mock up of the weapon system as well as a demonstration video.

**CO-WORKER INFORMATION EXCHANGE:** Like the officer interviewed, it is also the duty of her co-workers to brief various organizations. Because of this, co-workers are often found exchanging the same forms of information as the interviewed officer.

***INTERVIEW NUMBER FIFTEEN***

**INTERVIEWED:** Public Affairs Officer

**FROM:** Base X

**INFORMATION EXCHANGE DETAILS:** It was found that this officer has the same duties as the previous Public Affairs officer interviewed and performs numerous forms of information exchange with the surrounding community. During the interview, the officer elaborated on how the base map is often provided to local delivery drivers for locating a building, as well as to local community members visiting the base. When asked the kind of map provided for each base visitor, it was discovered that this officer utilizes the same map provided through the local lodging office.

One interesting note that did come out of this officer's interview was the thought of who is reading the base paper. It was discovered that Public Affairs Officers routinely refer to the civilian and military workforce on base as their primary audience. It is conceivable that at times the primary audience could leave a paper at a location outside the base. During these times if the paper is read by a local citizen, these readers are referred to as the shadow audience. The concept of a shadow audience is a form of information exchange unlike those mentioned previously in that it was not a direct result of the officer's interaction with the local community.

**INFORMATION EXCHANGE RECORDS:** Information exchanges are recorded in the form of a printed base paper.

**INFORMATION EXCHANGE NOTIFICATION:** Due to the position being a part of the Air Armament Center Staff (AAC), the Public Affairs Officer is responsible for reporting to the AAC commander and does so routinely.

**INFORMATION EXCHANGE EXAMPLES:** Unfortunately, due to the maps only being in paper form there was no electronic copy provided for the research effort.

**CO-WORKER INFORMATION EXCHANGE:** As with the previously interviewed Public Affairs Officer, the Pubic Affairs Office employees each have similar job descriptions and duties. Thus, information exchanges which the Public Affairs Officer was responsible for, also occurred routinely with co-workers.

***INTERVIEW NUMBER SIXTEEN***

**INTERVIEWED:** Civil Engineer

**FROM:** Base X

**INFORMATION EXCHANGE DETAILS:** This individual often exchanges base maps, digital photography, and data associated with ongoing projects. For the base map, it is in the form of a computer aided drafting file (CAD). The exchanges often occur with local emergency services or local contractors for emergency planning purposes or in order to complete an assigned task. During this interview, it was discovered that the same digital map, often exchanged from this officer, is also available for other base employees to access. The map is stored on the base intranet's EMIS system and thus is available for all base employees to download and use as they please.

**INFORMATION EXCHANGE RECORDS:** This officer often retains a copy of any information exchanged within a contract or project file. The file is used to manage the assigned project or contract.

**INFORMATION EXCHANGE NOTIFICATION:** Prior to this officer releasing the base map, authorization from the installation commander must be approved. The approval comes in written form through the use of a staff summary sheet.

**INFORMATION EXCHANGE EXAMPLES:** None Obtained

**CO-WORKER INFORMATION EXCHANGE:** It is also the duty of his co-workers to brief work with off base contractors. Because of this, co-workers are often found exchanging the same forms of information as the interviewed officer.

## ***ORGANIZATIONAL CHARTS***

The following organizational charts provide a graphical representation of each organization contacted from the surveyed bases. A green box on a chart indicates an organization where a CGO specified that he or she exchanges information with an off base agency. An orange box on a chart indicates an organization where a CGO responded to the survey, but he/she did not exchange information with the community. This does not mean that exchanges do not occur from these organizations, only that the respondent did not exchange information. Each blue box indicates an organization in which no one responded to the survey. It is possible that there are no CGOs working in those organizations. In addition, the green oval sections of the organizational chart are those organizations in which a CGO participated in a telephone interview. Figure 4.24 provides an organizational chart key which can be used to interpret each of the following organizational charts. Each chart was created using base telephone books and thus is only abbreviated representations of an entire base. They are not meant to represent the entire base or even a squadron, just key subsets. Finally, the reason why Base X has

more organizational charts than Base Y is due to Base X being responsible for three separate missions while Base Y is only responsible for one.

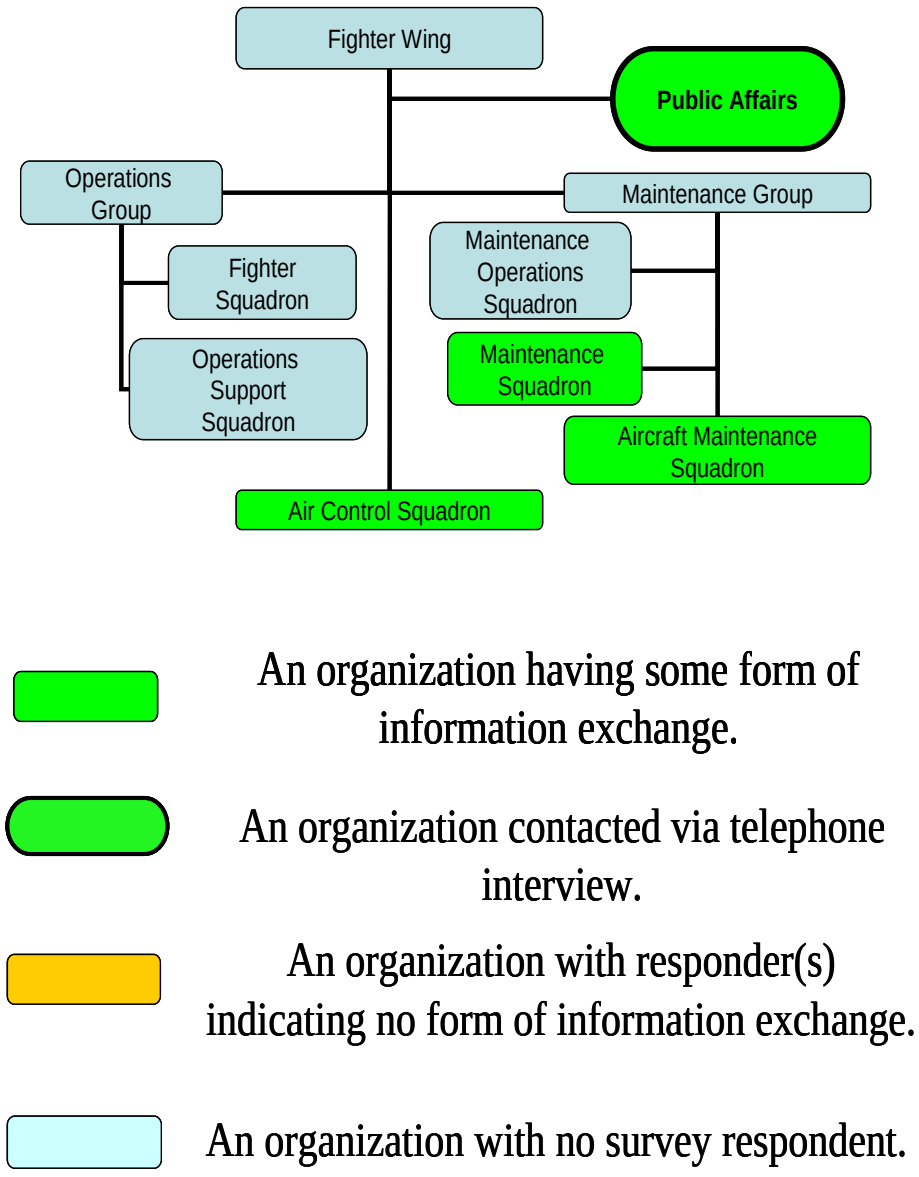



***Figure 4.24: Base X - Fighter Wing Organizational Chart***

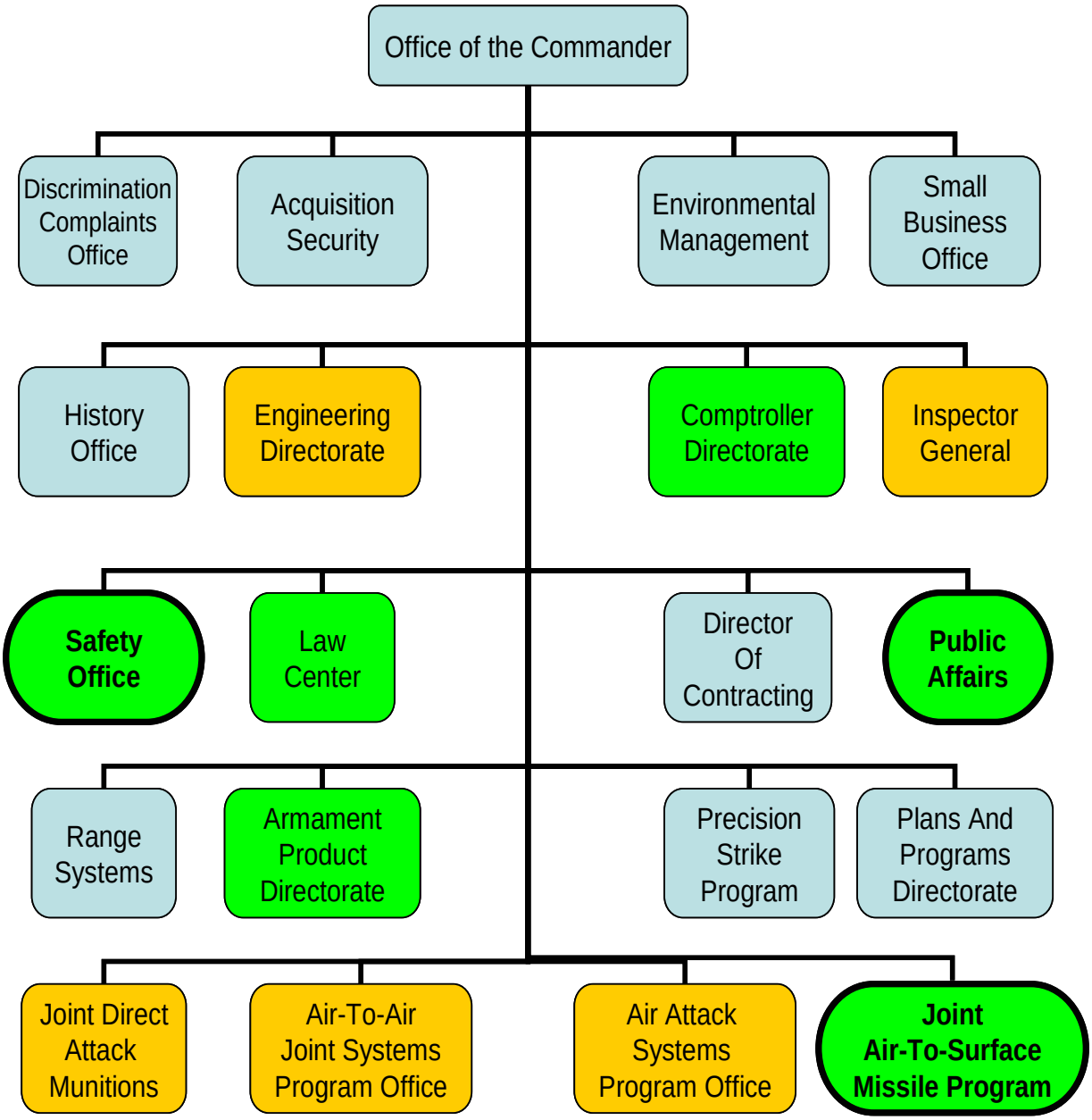



***Figure 4.25: Base X - Air Armament Center Organizational Chart***

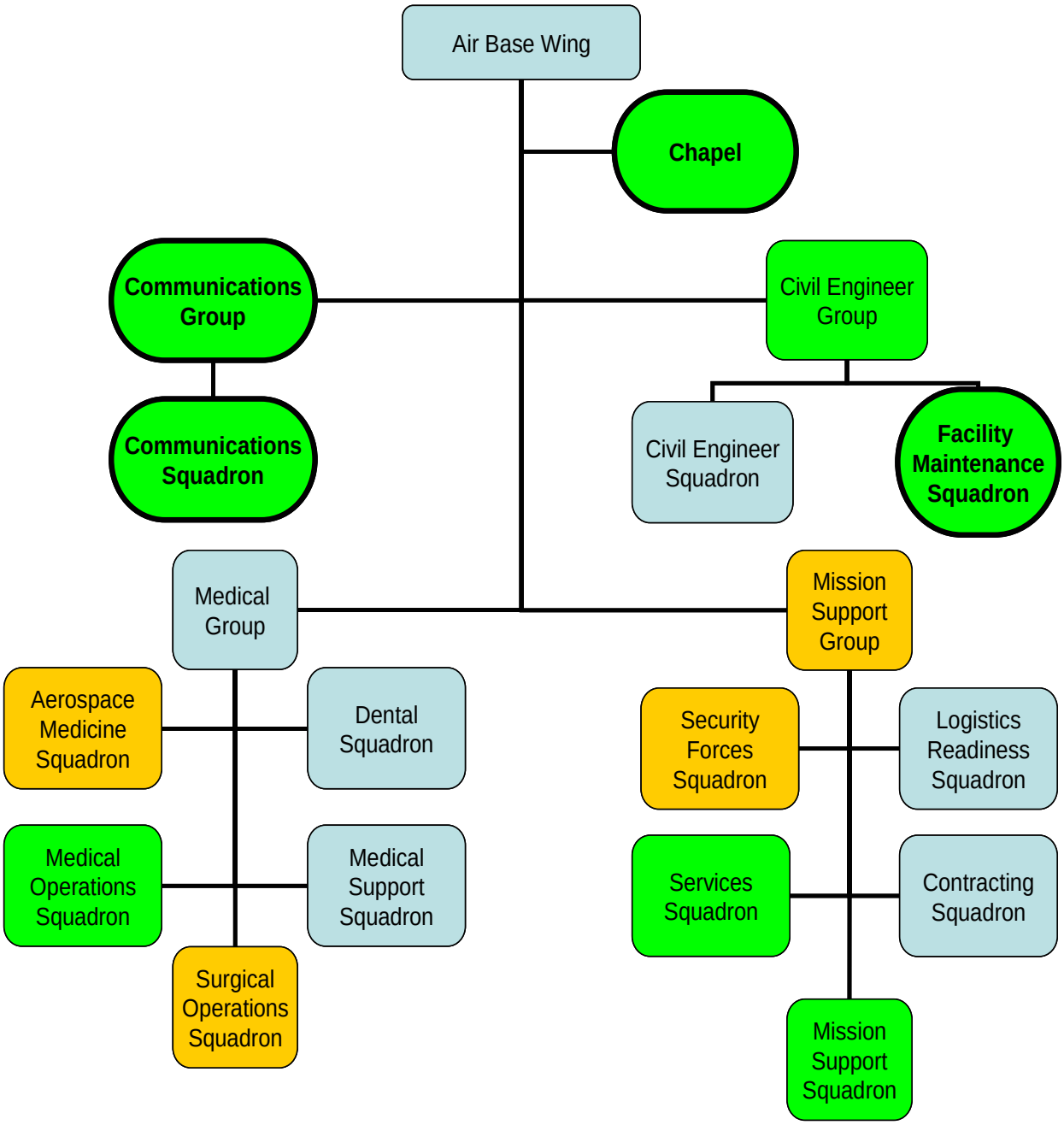



***Figure 4.26: Base X – Air Base Wing Organizational Chart***

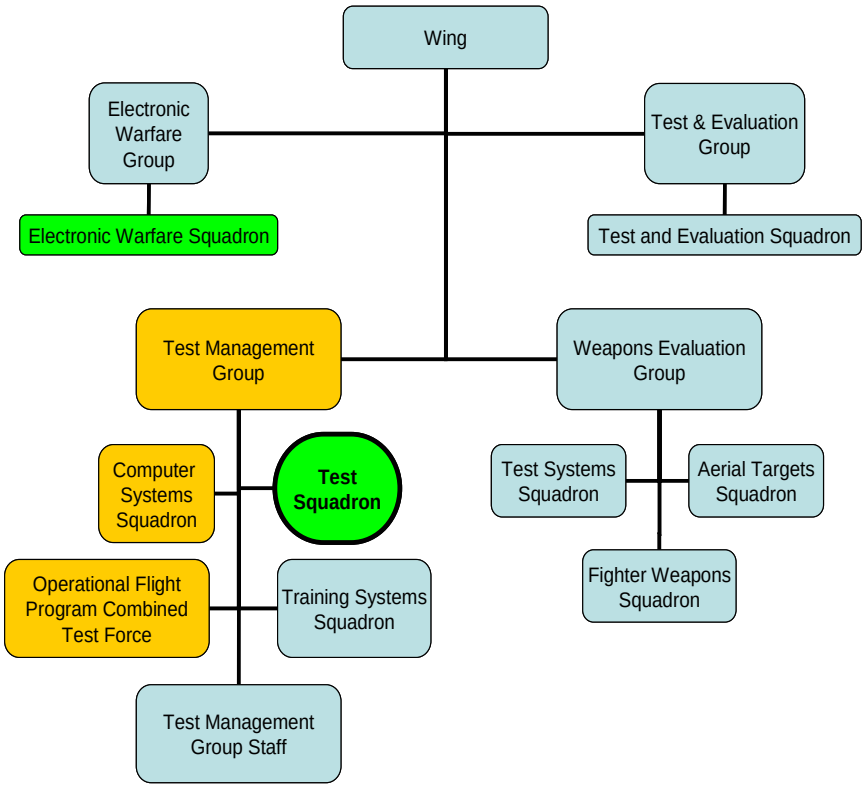



***Figure 4.27: Base X – Wing Organizational Chart***

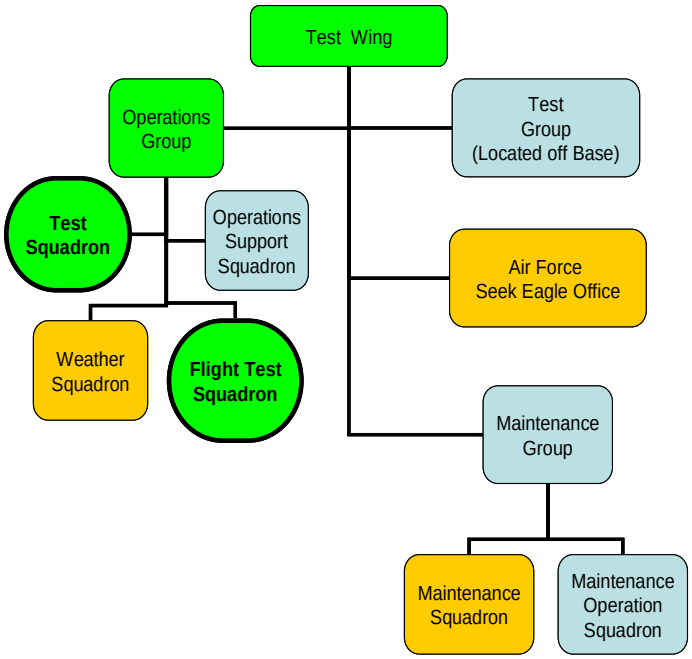



***Figure 4.28: Base X – Test Wing Organizational Chart***

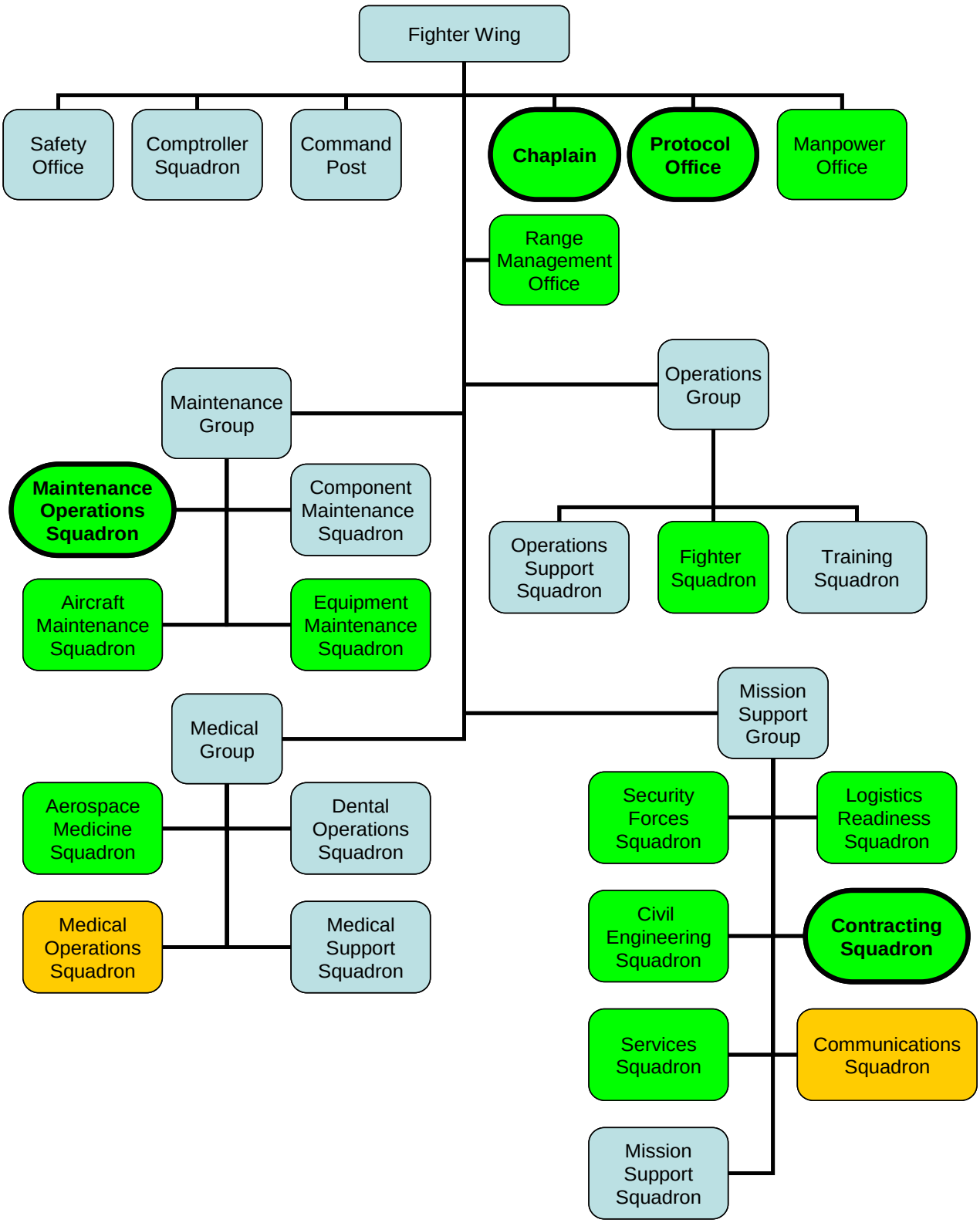



***Figure 4.29: Base Y – Fighter Wing Organizational Chart***

It must be recognized that the charts above do not in any way resemble the information charts foretold of in chapter three. The reason for the difference is due to the information collected during the survey and interview process. It became apparent during the data analysis that the duty descriptions provided during the survey process did not completely capture the duties each CGO is responsible for. In some instances CGOs had the same duty titles yet had different job descriptions, and in others the CGO did not provide a complete job description. Because of the lack of information and no feasible way of obtaining each job description, the charts above were presented in place of the information maps indicated in chapter three.

Referring again to the organizational charts above, it can be seen that 55 different organizations had a CGO which responded. Of those 55 organizations, 38 or 69% of them were found to exchange information. It is important to note that this is a conservative snapshot of the total number of organizations on base which may exchange information. Since not all CGOs or organizations from each base were represented during the survey, this percentage can only increase.

Finally, it must be noted that within the data validation and analysis section of chapter three (Section 3.3) the use of expert opinions was discussed. During this research, experts were solicited for their advice, yet at no time were any of these experts from the group level.

## 4.6 Information Sharing Summary

Looking at the exchanges found during this research effort, many of the same trends present during past research were found once again. In fact, many individuals

within this study were found to portray the traits of prosocial organizational behavior[4] discussed by Arthur P. Brief and Stephan J. Motowidlo. During this research, the CGOs exchanging information were doing so in an attempt to promote the welfare of the USAF. In addition, this research further confirmed the findings of Keith Kolekofski and Dr. Alan Heminger. It was found that regardless of the kind of the material exchanged, the amount of material, or the owner of the material, the exchange still occurred. This means, according to the findings of Kolekofski, each USAF CGO found to exchange information had a position that provided both the instrumentality[5] to share information as well as a potential information-sharing relationship.

## 4.7 Summary

This chapter began by presenting how the survey and methodology was implemented followed by the analysis of each applicable survey response to include a descriptive statistical analysis. This was followed by a review of the telephone interview methodology as well as a concise transcript from each telephone interview. In addition, some examples of information routinely exchanged between a base and its surrounding community were included from select interview subjects. Finally, abbreviated organization charts were provided that depicted those organizations from each base surveyed with a CGO found to exchange or not exchange information.

[4] "prosocial organizational behavior is behavior which is (a) performed by a member of an organization, (b) directed toward an individual group, or organization with whom he or she interacts while carrying out his or her organizational goals, and (c) performed with the intention of promoting the welfare of the individual, group, or organization toward which it is directed" (Brief and Motowidlo, 1996: 711)

[5] Instrumentality includes the size and amount of information requested, what the information represents in terms of power, the value it represents, and who will benefit from the sharing (Kolekofski and Heminger, 2003: 526).

# V. Conclusions and Recommendations

## 5.0 Summary of the Research

Data, information, and knowledge are exchanged daily from USAF bases to surrounding communities. The occurrence of these exchanges is the focus of this research effort. In an effort to gain a better understanding of where information is exchanged, why information is exchanged, and who information is exchanged with, this research effort attempted to answer the following questions:

1) Where are data, information, and knowledge exchanged to the surrounding community?

2) What are the controls in place to manage the information being transferred?

3) Who is receiving the information being exchanged?

These questions stem from the ultimate goal of this research, to aid managers and commanders in bettering their information management practices. To accomplish the research, a survey was developed and sent via e-mail link to the CGOs at two USAF installations. The participants and focus location were chosen for this research due to the ease in which they could be contacted as well as large number of potential participants.

The survey consisted of three parts, one which provided the demographic information of the individual taking the survey, another dealing with information exchanges the participant is apart of, and finally information exchanges occurring from a survey participant's co-workers. Upon completion of the survey distribution and retrieval there was a final total of 118 respondents. Combining the number of potential responses from both locations revealed a response rate of 8.9%. In addition, the majority of the responses were found to come from 2$^{nd}$ Lts.

The questions posed to each participant revealed that of the 118 CGO respondents, 55 were found to exchange some form of information, while the same CGOs indicated that 43 of their co-workers exchange information. In addition to these findings, it was also discovered that of the 55 CGOs found to exchange information, 61.82% did so using e-mail yet only 38.18% of them had to record the exchange in some fashion. Of the 44 CGO co-workers 74.42% were identified as using e-mail to exchange information while 48.84% did not have to record the exchange.

Upon completion of the initial survey analysis, a select group of the CGOs that responded to the survey were identified to participate in a telephone interview. The selection process identified 39 candidates for interviews, but only18 interviews occurred. The telephone interviews revealed numerous instances where interview subjects were required to exchange information with members of their surrounding community for the purpose of completing an assigned task. In addition, the interviews provided numerous examples of actual information exchanged. Many similarities between Base X and Base Y's information sharing tendencies were discovered. These similarities include having the same organizations at the two bases exchange information, having the same reasons for exchanging information present at both bases, and having the same kinds of information being exchanged at both bases. The results for each of these findings are found within Tables 5.1 to 5.3 respectively.

Many of the same organizations from Base X and Base Y were found to exchange information. Namely, the Chapel, Public Affairs Office, Services Squadron, Civil Engineer Squadron, Aircraft Maintenance Squadron, Maintenance Squadron, and

Contracting Squadron from each base exchanged information with their local communities.

| Same Organizations Found To Exchange Information |
|---|
| Chapel |
| Public Affairs |
| Services Squadron |
| Civil Engineer Squadron |
| Aircraft Maintenance Squadron |
| Maintenance (Operations) Squadron |
| Contracting |

***Table 5.1: Same Organizations That Exchange Information***

The similar reasons for information exchanges occurring at each base were found to be for project discussions with contractors, public speaking engagements, the planning of base events, and notifications for public awareness or improved relations.

| Common Forums For Information Exchange |
|---|
| Project Discussions With Contractors |
| Public Speaking Engagements |
| Event Planning |
| Notifications For Public Awareness or Improved Relations |

***Table 5.2: Common Forums for Information Exchange***

Finally, from the survey and interview processes, the same types of information exchanged between the two surveyed bases were found to be base maps, event details, project or contractual related data, federally required information releases, and interesting or newsworthy base stories.

| General Types of Information Exchanged |
|---|
| Base Maps |
| Event Details |
| Project/Contractual Related Data and Information |
| Federally Required Data |
| Interesting and Newsworthy Base Stories |

***Table 5.3: General Types of Information Exchanged***

During the research process, it was also found that the reason for many of the dissimilar information exchanges was due to Base X and Base Y having dissimilar missions. In fact, Base X is responsible for three separate missions, while Base Y is responsible for only one. Each mission has its own requirements and thus reasons for exchanging information with local organizations. For example, Base X has numerous developmental engineers conducting many test and evaluation missions, while developmental engineers aren't even present at Base Y. It was because of the difference in requirements and missions that different kinds of information exchanges occurred at each base.

During the interviews, each information exchange that occurred was for the purpose of accomplished some aspect of the subject's mission. In some cases the mission was an additional duty, or an assigned task or even collaborating with another member of the Air Force. Regardless, it was found that each exchange had a purpose and that purpose fulfilled some part of the subject's mission.

Finally, both the online survey and telephone interviews were successful in discovering answers to the initial research questions. The next section discusses in depth the conclusions found during this research effort.

## 5.1 Conclusions

This section deals specifically with the conclusions of this research effort. Two conclusions are offered, followed by conclusions to the initial research questions themselves.

The first conclusion suggested is people are appropriately careful with exchanging information. Each person that exchanged some form of information with the community accomplished the exchange with care. It was found via survey and telephone interview that all subjects exchanging information were cautious with the information being handed out and aware of its value. Each exchange had a purpose and an ultimate goal of accomplishing an assigned task.

Second, it is suggested that the information exchanges with off base organizations are critical to the accomplishment of an organization's mission. All 55 CGOs that exchanged information did so for the purpose of accomplishing their organization's mission. In addition, those same CGOs represent only a small subset of the organizations on a USAF base. Due to only a small subset of organizations being represented during this research effort, the number of organizations exchanging information can only increase. This means that there are a lot of exchanges going on for the purpose of accomplishing organizational missions, and this research only captures a small percentage of them. From the organizational charts provided in chapter four, 55 organizations were represented, and 38 of those or 69% were found to exchange information with off base organizations. Each of the surveyed individuals indicated that the exchanges were necessary to accomplish their mission.

*Research Question #1*

Where are data, information, and knowledge exchanged to the surrounding community?

During this study, data, information, and knowledge were found to be exchanged from a wide variety of locations within each USAF base studied. Some of these areas

were expected (Civil Engineering, Contracting, and Public Affairs) yet at the same time some were interesting to discover (Chaplain, Aircraft Maintenance Squadron, and Maintenance Operations Squadron). The conclusion made from the information obtained is that information is being exchanged off base by many organizations on base, each with the perceptible goal of accomplishing an assigned task.

*Research Question #2*

What are the controls in place to manage the information being transferred?

Other than formal security procedures, expected for the use and exchange of 'SECRET' information, no formal controls were discovered during this research effort to manage the information being transferred. Information management systems were found to be used during the initial retrieval of information for the ultimate purpose of distribution but again, no dominating answer or conclusion other than organizations appeared to have appropriate levels of control over information exchanges.

*Research Question #3*

Who is receiving the information being exchanged?

It was concluded that each individual on the receiving end of an information exchange was associated with mission requirements. These came in the forms of project requirements, contractors, community relations, and finally special people (DV and Honorary Squadron Commander Programs).

Some extrapolation can be made from these findings. Other Air Force bases have the same organizations as those identified during this research effort. Therefore, it is

suggested that those same organizations at other Air Force bases will need to exchange information with their surrounding communities in order to complete their missions. Knowing that other Air Force bases engage in the same activities as those found during this research, it can be said that similar information exchanges will occur. Finally, due to other Air Force bases having both the same organizations and potential for similar information exchanging activities, it is suggested that the same kinds of information will also be exchanged at other Air Force bases.

## 5.2 Limitations

This section will discuss the limitations found during this research effort. The limitations discussed are the research timeline, pre-testing group, survey response rate, survey problems, survey focus group, and survey focus location.

### *Pre-Test Group*

The pre-testing group chosen for this project was the AFIT, Graduate of Engineering Management class of 2004. Though competent and qualified to be utilized in the pre-testing phase of this project, this group does not provide a board review of the survey instrument. In fact, the group chosen for the research effort only provided the viewpoint of other Civil Engineers. The survey itself was sent to not only Civil Engineers but numerous other career fields as well, each with their own viewpoint of the USAF. In addition, the method of survey pre-testing chosen during this project did not allow the researcher to truly test the survey instrument. The individuals chosen to conduct the pre-test were asked for their opinions of the survey instrument and not to take

the survey themselves. Had the pre-test group taken the survey rather than provided comments, the researcher could have possibly alleviated confusion which was discovered later during the survey process.

### *Response Rate*

During any kind of research where a survey is involved, data to answer research questions will only come from those who respond. In addition, it is difficult if not impossible to determine trends from data provided during the survey when the number of individuals asked to participate is unknown. In this case, though 118 individuals responded, it was impossible to determine if trends existed at each installation. This is due to not being able to find the total number of CGOs from each installation who actually received a request to take the survey. The method of survey distribution chosen, though expedient, did not allow for a true response rate to become available. This is in part because there is no way of knowing how many CGOs at each installation received the e-mail containing a link to the survey.

### *Focus Group*

The focus group chosen for this project was the Company Grade Officers. These are officers who typically have eight or less years of experience in the USAF as well as, at most, only three years of experience at any one particular base. Because of these factors, most of the survey respondents have a short time frame of experience to base their responses upon. In addition, only using CGOs did not allow for the survey to reach every organization on base. Many installations have organizations which do not have a CGO assigned to them (Historian, Small Business Office, Equal Opportunities

Office…etc.). In addition, by focusing merely on CGOs, the research obtained only minimal specifics of the actual information exchanges occurring. Had the opportunity been available to contact civilian co-workers, the limited depth of examples could have been reduced.

*Survey Distribution*

The USAF is an extremely large organization. This project simply focused on two Air Force installations out of a vast number that exist. Thus, other than the extrapolations mentioned at the end of chapter four (Section 4.7), specific to only the organizations contacted during this research effort, no other findings can be applied to other Air Force bases. Had the project expanded to other bases with different organizations, more generalities regarding information exchange could possibly have been formed.

## 5.3 Areas for Further Study

The potential for future research efforts is definitely a strong possibility upon the conclusion of this project. The purpose of this section is to discuss future areas and provide a short description of each area. To propose future areas of research, this section will list them in numerical format.

*Research Area #1*

Future research could survey a wider audience for the kinds of information exchanged. By using similar research questions with a wider range of subjects, other areas and examples of information exchange can be revealed. This can include civilians,

other levels of command (MAJCOM, HQ AF…etc.), and other organizations (AFRL, Space Command, Reserve Officer Training Corps…etc.).

*Research Area #2*

It would be beneficial to discover all the kinds of redundant information sources on a particular Air Force Base. Specifically, a researcher can survey bases for all the available forms of similar information being exchanged. Some examples are base maps or base phone books. Having redundant resources of information means that more than one organization is responsible for keeping track of that information and duplicate work is being performed. By identifying and eliminating redundancy, a more efficient organization can potentially emerge.

*Research Area #3*

Information security is another area of future research. Often base employees, both military and civilian, are required to work with data, information and knowledge that is not secret. Unfortunately, just like classified information, unclassified information can potentially be harmful to an organization when placed in the wrong hands. It would be beneficial to not only document who is receiving information transferred off base as well ask the kinds of information being exchanged but also how the information is dealt with once exchanged. Or, another approach would be to examine the various information security techniques currently being utilized within the Air Force for commonalities or trends.

*Research Area #4*

Finally, one last area for future research is to survey senior leadership for their views on the information being released. It would be interesting to discover how senior leadership judges the kinds of information transferred off base.

## Appendix A: Survey

## A STUDY OF INFORMATION EXCHANGE BETWEEN USAF BASES AND THEIR SURROUNDING COMMUNITIES

**Purpose**: The purpose of this research is to document areas where information is exchanged between base level organizations and the local community. The survey results will aid in the improvement of information management practices throughout the USAF.

**Participation**. We would greatly appreciate your completing this survey. Your participation is COMPLETELY VOLUNTARY. However, your input is important for us to understand the possible areas where information is exchanged with a base and its surrounding community. You may withdraw from this study at any time without penalty, and any data that have been collected about you, as long as those data are identifiable, can be withdrawn by contacting Captain Andrew Clewett. Your decision to participate or withdraw will not jeopardize your relationship with your organization, the Air Force Institute of Technology, the Air Force, or the Department of Defense.

**Confidentiality.** ALL ANSWERS ARE **STRICTLY CONFIDENTIAL.** No one other than Lt Col Heidi Brothers (research advisor at the Air Force Institute of Technology which is an organization independent of your organization), or Captain Andrew Clewett will ever see your questionnaire. Findings will be reported without specific ties to names or organizations. We ask for some demographic and unit information in order to interpret results more accurately, and in order to link responses for an entire unit. Reports summarizing trends in large groups may be published.

Because this is a web-based questionnaire, certain precautions have been built into the database to ensure that your confidentiality is protected. First, the questionnaire and database are not stored on your organization's server; instead, the questionnaire and database will be stored on the Air Force Institute of Technology's secure server. This makes it impossible for your leaders to circumvent the surveyors and try to access any identifiable data without their knowledge. Second, you will only have access to your responses. Finally, the database is protected by a password that is known only by the aforementioned surveyors making it impossible to access your data. Still, if you don't feel comfortable completing the on-line version of the questionnaire you can print a paper version of the questionnaire, complete it, and return it directly to Capt Andrew Clewett.

I have read the above information and am willing to participate in the study.

Last Name (Print) First Name Office Symbol

**Contact information**: If you have any questions or comments about the survey, contact Captain Andrew Clewett at the number, mailing address, or e-mail address.

Captain Andrew Clewett
AFIT/ENV BLDG 640
2950 Hobson Way
Wright-Patterson AFB OH 45433-7765
Email: Andrew.Clewett@afit.edu
Phone: DSN 785-2998, commercial (937) 205-2928

**Privacy Notice**

The following information is provided as required by the Privacy Act of 1974:

**Purpose:** To obtain information regarding the exchange of information between a base and its local community.

**Routine Use:** The survey results will be used to provide additional insight into the positions that routinely exchange information with the local community. A final report will be provided to participating organizations. No analysis of individual responses will be conducted and only members of the Air Force Institute of Technology research team will be permitted access to the raw data.

**Participation:** Participation is VOLUNTARY. No adverse action will be taken against any member who does not participate in this survey or who does not complete any part of the survey.

**INSTRUCTIONS**

- Base your answers on your own thoughts & experiences
- Please feel free to provide comments after each question

1) What is your rank?

    a. 2nd Lieutenant

    b. 1st Lieutenant

    c. Captain

2) How long have you been on active duty?

    a. Less than 1 year

    b. 1 – 2 Years

    c. 2 – 3 Years

    d. 3 – 4 Years

    e. 4 or more Years

3) How long have you been at your current installation?

_____

4) How long have you held your current position?

_____

5) What is your job title?

_____

6) What are the duties associated with this job?

_____

_____

7) Reflecting on your current job, please select all relevant forms of information exchange associated with your current position which occur with the local community?

    a. Exchange of base map
    b. Exchange of digital photography
    c. The disclosure of hazardous material location
    d. The disclosure of upcoming events
    e. Data associated with a current/ongoing project
    f. No exchanges take place (Proceed to question 13.)
    g. Other: _____

8) If an exchange of information takes place, please provide the reason for the exchange and how often the exchange occurs?

_____

_____

_____

_____

9) Did you have to inform anybody of any type of information exchange, and if so, who?

   a. Yes, my supervisor
   b. Yes, my security manager
   c. Yes, other (Please explain: _____)
   d. No

10) Did you have to record the exchange of information at any time, and if so, why and how was the exchange recorded?

   a. Yes
   b. No

Recording Method:_____

11) Do any of the exchanges occur over e-mail?

   a. Yes
   b. No

12) Do you have any recent examples of information exchanges with the surrounding community?

a. Yes

b. Yes, and I could provide an example for this research effort.

I can be reached at DSN: - or COMM: ( ) -

c. No

## Further Areas of Information Exchange

13) Shifting the focus from you to the other employees in your office, please select the situations where an individual working for you, above you, below you or just near you may exchange information with the local community.

a. Exchange of base map

b. Exchange of digital photography

c. The disclosure of hazardous material location

d. The disclosure of upcoming events

e. Data associated with a current/ongoing project

f. No exchange takes place (You have completed the survey. Thank you for your participation.)

g. Other: _____

14) If individuals working for you, above you, below you or near you exchange information with the surrounding community, please provide the reason for the exchange and how often the exchange occurs?

_____

_____

15) Do any of the exchanges the individuals working for you, above you, below you or near you occur over e-mail?

a. Yes

b. No

16) Could you obtain a recent example of information exchange from your co-workers to the surrounding community?

a. Yes

b. Yes, and I could provide an example for this research effort.

I can be reached at DSN: - or COMM: ( ) -

c. No

17) Do individuals working for you, above you, below you or near you have to inform anyone about the information exchange, and if so, who?

a. Yes, me

b. Yes, my superior

c. Yes, the security manager

d. Yes, other (Please explain: _____)

e. No

18) Did the individuals working for you, above you, below you or near you have to record the exchange of information at any time, and if so, why and how was the exchange recorded?

a. Yes

b. No

Recording Method:_____

**THANK YOU FOR PARTICIPATING**

**ALL INFORMATION IS STRICTLY CONFIDENTIAL**

## Appendix B: List of Acronyms

AFI – Air Force Instruction

AFIT – Air Force Institute of Technology

AFPC – Air Force Personnel Center

BRAC – Base Re-alignment and Closure

CAD – Computer Aided Drafting

CGO – Company Grade Officer

CGOC – Company Grade Officers Council

DPSAS - Customer Assistance Directorate, Survey Branch

EMIS - Executive Management Information System

EOD – Explosive Ordinance Disposal

HSRB – Human Subjects Review Board

IM – Information Management

IRM – Information Resource Management

IS – Information System

ITMRA - Information Technology Management Reform Act of 1996

KM – Knowledge Management

Lts – Lieutenants

OIC – Officer in Charge

PA System – Public Address System

PA Officer – Public Affairs Officer

NATO – North Atlantic Treaty Organization

USAF – United States Air Force

## Appendix C: Web Based Survey Results

### Responses From Question 1 (Base X):
### *What is your rank?*

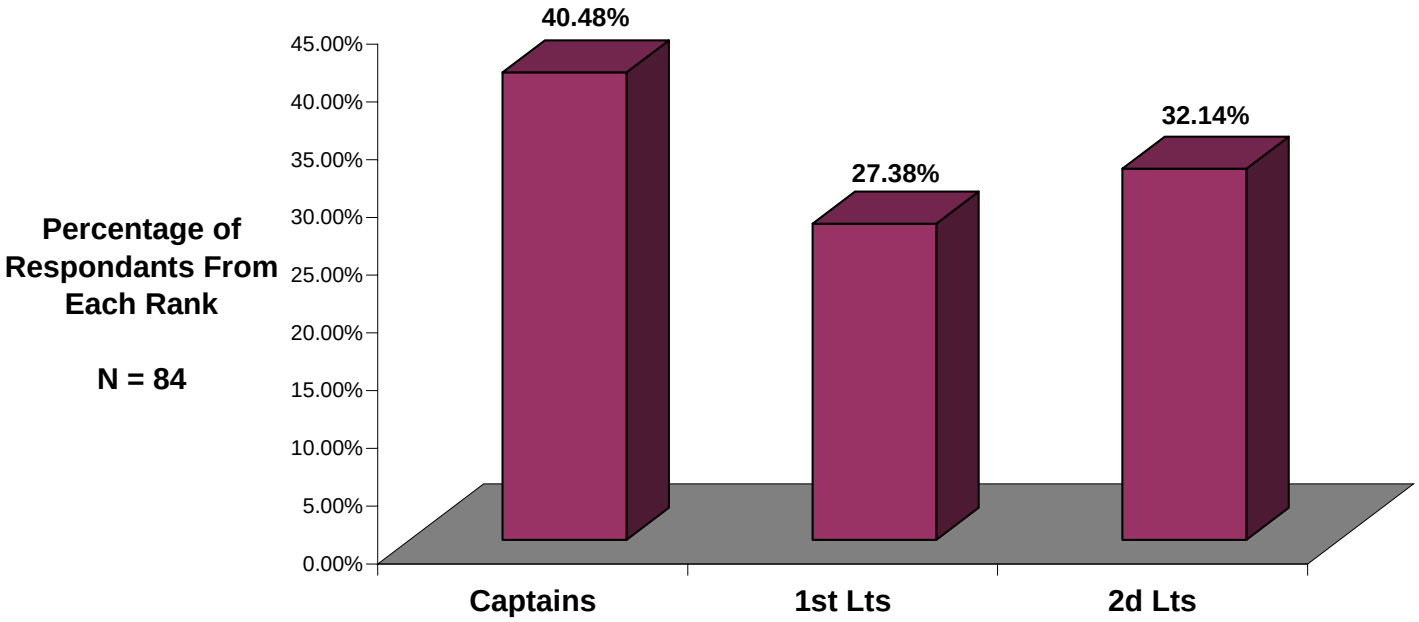



*Figure C-1: Survey Responses - Question 1 (Base X)*

## Responses From Question 1:
## ***What is your rank?***

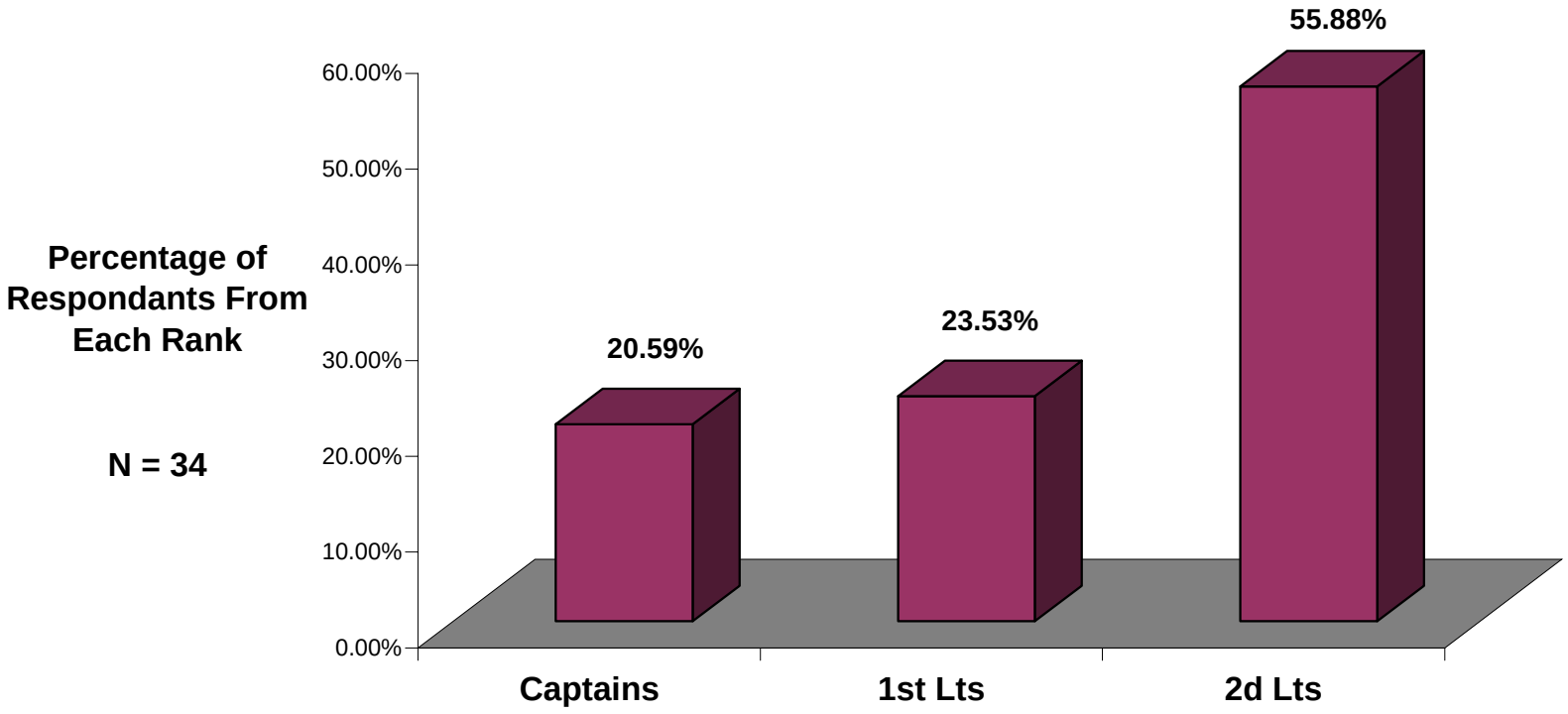



***Figure C-2: Survey Responses - Question 1 (Base Y)***

## Appendix D: AFPC Survey Approval Letter

**DEPARTMENT OF THE AIR FORCE**
AIR FORCE INSTITUTE OF TECHNOLOGY
WRIGHT-PATTERSON AIR FORCE BASE, OHIO

24 Sept 03

MEMORANDUM FOR HQ AFPC/DPSAS

FROM: AFIT/ENV
BLDG 640
2950 Hobson Way
WPAFB, OH 45433-7765

SUBJECT: Request for survey approval

References: AFI 36-2601, *Air Force Survey Program*

1. In accordance with AFI 36-2601, we would like to request your approval of the attached questionnaire (Attachment 1) that will be used to explore the exchange of information occurring at base level with surrounding communities.

2. The data collected will be analyzed by Captain Andrew Clewett and reported to the sponsors collectively. Based on the results, the data will help the leadership better manage information being exchanged daily with a base and its surrounding community.

3. If you have any questions about this request, please contact Captain Andrew Carter Clewett - Phone (937) 205-2928; E-mail – Andrew.Clewett@afit.edu or Dr. Alan Heminger who will serve as a committee member – Phone (937) 785-3636 ext. 4797; E-mail Alan.Heminger@afit.edu. Or, please contact Lt Col Heidi Brothers who will serve as the Thesis Advisor (primary investigator) – Phone (719) 333-9119; E-mail – Heidi.Brothers@usafa.af.mil.

/// Signed 24 September 03 ///
ANDREW CLEWETT, Captain, USAF
Student, Air Force Institute of Technology

Attachments:
1. Questionnaire
2. AFI 36-2601 Survey Request Information

## Appendix D Attachment 2: AFPC Survey Approval Letter

**AFI 36-2601 Survey Request Information**

The following information is provided IAW AFI 36-2601, section 2.

**a. Survey purpose.** The purpose of this research is to document areas where information is exchanged between base level organizations and the local community. The survey results will aid in the improvement of information management practices throughout the USAF. The sponsor for this research effort is Col Brian Cullis, HQGIO.

**b. How will the results be used?** The survey results will be used to map where information is exchanged with the local community. In turn this will allow managers to better tailor their management practices for the specific information being released. An example of an information map is located in figure 1:

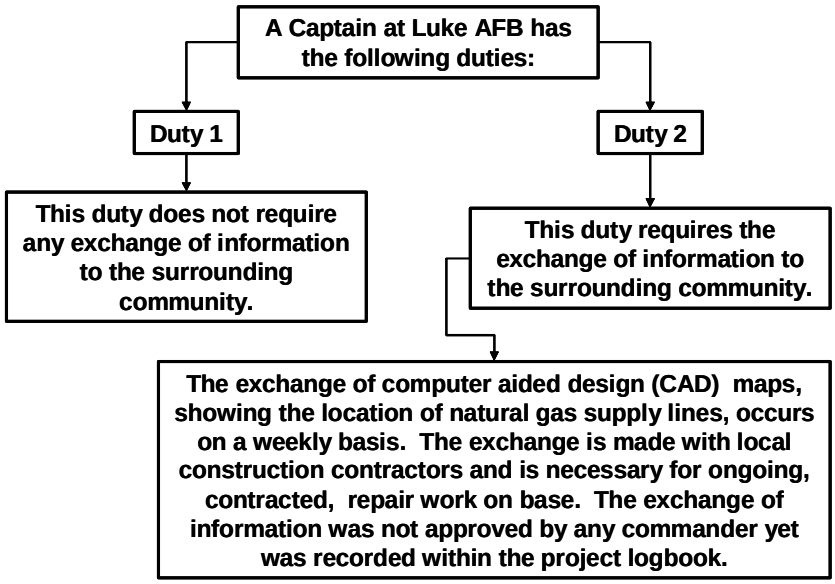



**Figure 1**

**c. POC**. If you have any questions about this request, please contact Captain Andrew Carter Clewett - Phone (937) 205-2928; E-mail – Andrew.Clewett@afit.edu or Dr. Alan Heminger who will serve as a committee member – Phone (937) 785-3636 ext. 4797; E-mail Alan.Heminger@afit.edu. Or, please contact Lt Col Heidi Brothers who will serve as the Thesis Advisor (primary investigator) – Phone (719) 333-9119; E-mail – Heidi.Brothers@usafa.af.mil.

**d**. **Population.** The population of interest is individuals who stand the most chance of interacting with a base's surrounding community for the purposes of completing a given task, in essence individuals at the lower levels of management. To meet this condition, the survey will be administered to two groups of CGOs located at two separate USAF bases. To validate the responses from the two bases, a third base will be contacted via telephone for response comparison purposes.

**e. How will the data be collected?** The data will be collected through both e-mail and telephone (interview) survey techniques. Initially, subjects will be provided a written survey via e-mail and upon receipt of their responses, telephone interviews will be conducted to obtain any further clarification that may be necessary.

**f. When and how often will people be surveyed?** Subjects will be selected on a voluntary basis from the Company Grade Officer Corps at two USAF bases. The CGOs will be notified of the survey via e-mail which will be obtained through the global e-mail address listings. In addition, a third base will be selected in order to validate responses from the previously chosen subjects. Data will be collected from approval of the survey till 1 Dec 03.

## Appendix E: Human Subjects Review Board Exemption Request Letter

24 Sep 03

**DEPARTMENT OF THE AIR FORCE**
AIR FORCE INSTITUTE OF TECHNOLOGY
WRIGHT-PATTERSON AIR FORCE BASE, OHIO

MEMORANDUM FOR AFIT/ENV
AFIT/ENR
AFRL/HEH
IN TURN

FROM: AFIT/ENV/GEM

SUBJECT: Request for Exemption from Human Experimentation Requirements (AFI 40-402): Thesis Research, AFIT/ENV/GEM, A Study of Information Management at Base Level.

1. Request exemption from Human Experimentation Requirements of AFI 40-402 for the proposed interview questions to be conducted in conjunction with thesis research at the Air Force Institute of Technology. Purpose of this study is to document information that is exchanged to surrounding communities, as well as the information management practices in place to control the exchange. The results of this study will aid in developing more effective information management techniques for USAF.

2. This request is based on the Code of Federal Regulations, title 32, part 219, section 101, paragraph (b) (3) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior that is not exempt under paragraph (b)(2) of this section, if:(i) The human subjects are elected or appointed public officials or candidates for public office; or (ii) Federal statute(s) require(s) without exception that the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter. Methodology used to collect information for thesis research is based on survey (interviews) procedures. The following information is provided to show cause for such an exemption:

2.1. Equipment and facilities: No special equipment or facilities will be used.

2.2. Subjects: Subjects will be selected from USAF bases and be drawn from global CGO listings.

2.3. Timeframe: Data will be collected from approval date – 1 Jan 03.

2.4. Description of the survey: The data will be collected via telephone interviews and an internet based questionnaire. Each question specifically designed to probe

for specifics on where information is exchanged with the surrounding populous of a typical USAF base.

2.5. Data collected: No identifying information is obtained through the survey. Data collected on individual subjects include: rank, years in service, time on station, position title, assigned duties, examples of exchanged information, and current method to manage information.

2.6. Informed consent: All subjects are self-selected to volunteer to participate in the survey. No adverse action is taken against those who choose not to participate. Subjects are made aware of the nature and purpose of the research, sponsors of the research, and disposition of the survey results. A copy of the Privacy Act Statement of 1974 is presented for their review.

2.7. Risks to Subjects: Individual responses of the subjects will not be disclosed. This eliminates any risks to the subjects as noted in paragraph 2. There are no anticipated medical risks associated with this study.

3. If you have any questions about this request, please contact Captain Andrew Carter Clewett - Phone (937) 205-2928; E-mail – Andrew.Clewett@afit.edu or Dr. Alan Heminger who will serve as a committee member – Phone (937) 785-3636 ext. 4797; E-mail Alan.Heminger@afit.edu. Or please contact Lt Col Heidi Brothers who will serve as the Thesis Advisor (primary investigator) – Phone (719) 333-9119; E-mail – Heidi.Brothers@usafa.af.mil.

ANDREW C. CLEWETT, Capt, USAF
Graduate Student, AFIT/ENV/GEM

Alan R. Heminger, PhD
Associate Professor, Air Force Institute of Technology
Committee Member, AFIT/ENV/GIR

Attachment:
List of Interview Questions

## Appendix F: Human Subjects Review Board Approval Letter

**DEPARTMENT OF THE AIR FORCE**
AIR FORCE RESEARCH LABORATORY (AFMC)
WRIGHT-PATTERSON AIR FORCE BASE, OHIO

22 October 2003

MEMORANDUM FOR AFIT/ENV
ATTN: Andrew C. Clewett
FROM: AFRL/HEH

SUBJECT: Approval for the Use of Volunteers in Research

1. Human experimentation as described amendment to Protocol 04-04-E,
"A Study of Information Management at Base Level", may begin.

2. In accordance with AFI 40-402, this protocol was reviewed and approved by the Wright Site Institutional Review Board (WSIRB) on 16 October 2003, the AFRL Chief of Aerospace Medicine on 22 October 2003.

3. Please notify the undersigned of any changes in procedures prior to their implementation. A judgment will be made at that time whether or not a complete WSIRB review is necessary.

Signed 22 October 2003
HELEN JENNINGS
Human Use Administrator

## Appendix G: Human Subjects Review Board Exemption Addendum Letter

**DEPARTMENT OF THE AIR FORCE**
AIR FORCE INSTITUTE OF TECHNOLOGY
WRIGHT-PATTERSON AIR FORCE BASE, OHIO

24 Nov 03

MEMORANDUM FOR AFIT/ENV
AFIT/ENR
AFRL/HEH
IN TURN

FROM: AFIT/ENV/GEM

SUBJECT: Submitting Addendum for Exemption from Human Experimentation Requirements (AFI 40-402): Thesis Research, AFIT/ENV/GEM, A Study of Information Management at Base Level. (Reference AFIT ENR 2004-004; AFRL HEL APP# F-WR-2004-0004-E.)

1. Following the completion of an initial web based survey, further clarification is to participant responses is now necessary. The clarifying telephone interview questions are attached.

2. The questions were not submitted during the initial HSRB exemption request due to information not being available to properly write follow-up questions.

3. After discussing this addition with Teresa Cunningham, it was determined that telephone interviews be allowed to begin immediately (prior to this addendum being approved/received by the HSRB.). This permission is due to no change from the initial survey exemption request (ref. paragraph 2.4 of initial HSRB exemption letter).

3. If you have any questions about this addition, please contact Captain Andrew Carter Clewett - Phone (937) 205-2928; E-mail – Andrew.Clewett@afit.edu or Dr. Alan Heminger who will serve as a committee member – Phone (937) 785-3636 ext. 4797; E-mail Alan.Heminger@afit.edu. Or, please contact Lt Col Heidi Brothers who will serve as the Thesis Advisor (primary investigator) – Phone (719) 333-9119; E-mail – Heidi.Brothers@usafa.af.mil.

ANDREW C. CLEWETT, Capt, USAF
Graduate Student, AFIT/ENV/GEM

Alan R. Heminger, PhD
Associate Professor, Air Force Institute of Technology
Committee Member, AFIT/ENV/GIR

Attachment:
List of Participant Criteria and Telephone Interview Questions

## Appendix H - Telephone Interviewee Criteria and Questions

***Criteria***

1) Had to have exchanged some form of information.

2) The reason for the exchange and what is being exchanged must not be obvious (i.e. not specifically identified within the web based survey).

3) Must have provided some form of contact (i.e. their name, phone number…etc.).

4) Must have held their position a minimum of 6 months. Should a participant be the only contact for a particular career field, the 6 month limitation can be waived.

***Questions***

**Questions will only be asked if there was an ambiguous response provided.**

1) What exactly does your office symbol stand for?

2) If the individual exchanged the base map:

a) What kind of base map was it?

b) Who did the exchange occur with?

c) Where did you get the map from in order to exchange it?

d) Did you need to provide more than one copy? If so, why?

e) Do you have a copy available to send me?

3) If the individual exchanged data to for a current/ongoing project:

a) What is the project?

b) What is the data in reference to?

c) What does the data contain?

d) What type of individual or group did you exchange data with?

4) If the individual exchanged digital photography:

a) What type of photograph was it? What was the subject matter of it?

b) Do you have a copy of any digital photography you exchanged?

c) Could you send me a copy? Why not?

5) If the individual needs to disclose the location of hazardous material:

a) How detailed is the location identified (i.e. it's just on the base or it's in this facility)?

b) Is the location identified using a base map?

c) Do you have a recent copy you could provide me?

6) If the individual exchanges information for the disclosure of an upcoming event:

a) What type of event was it?

b) Did this event involve the public?

c) Did a base map need to be provided to the public for this event?

d) If so, where did the map come from?

7) If the individual exchanges information for an unlisted reason:

a) What was the reason for the exchange?

b) What did the exchange contain?

8) If the individual did have to inform someone of the exchange:

a) Who did you inform?

b) Why did you have to inform someone of the exchange?

9) If the individual did not have to inform someone of the exchange:

b) Why didn’t you have to inform someone of the exchange?

10) If the individual did have to record exchange:

a) Why did you have to record exchange?

b) How was this exchange recorded?

c) What are these records used for?

11) If the individual did not have to record the exchange:

b) Why didn’t you have to record the exchange?

**THESE SAME QUESTIONS WILL BE REPEATED FOR THE CO-WORKER QUESTIONS.**

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## Vita

Captain Andrew C. Clewett graduated from Esperanza High School in Anaheim, California. He then entered undergraduate studies at Embry-Riddle Aeronautical University Prescott Arizona where he graduated with a Bachelor of Science degree in Electrical Engineering in December of 1998. At this same time Captain Clewett received a commission through Air Force Reserve Officer's Training Course Detachment 028 Embry Riddle Aeronautical University.

Captain Clewett's first assignment was at Detachment 028 were he served as the Assistant to the Commander. Next, Captain Clewett moved to Laughlin AFB to begin Undergraduate Pilot Training. Prior to completing pilot training, Captain Clewett moved once again to Luke AFB, Arizona to begin his career as a Civil Engineer. While stationed at Luke AFB, he deployed oversees to spend three months at Price Sultan Air Base as the Readiness Officer. In July 2003, Captain Clewett entered the Graduate School of Engineering Management, Air Force Institute of Technology. Upon graduation, he will be stationed within the Aeronautical Systems Center Wright Patterson Air Force Base.

## REPORT DOCUMENTATION PAGE

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Clewett, Andrew C., Captain, USAF

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**13. SUPPLEMENTARY NOTES**

**4. ABSTRACT**

Data, information, and knowledge are exchanged daily from United States Air Force (USAF) bases to surrounding communities. The purpose of this research is to aid managers and commanders in gaining a better understanding of their information flow and bettering their information management practices. The research specifically seeks answers to the questions of where information is exchanged, why information is exchanged, and to whom information is exchanged with.

To accomplish the research, a survey was developed and sent via e-mail link to the Company Grade Officers (CGOs) at two USAF installations. 118 CGOs responded to the survey providing an approximate response rate of 8.9%. Of the 118 CGO respondents, 55 were found to exchange some form of information with the community. These CGOs indicated that 43 of their co-workers also exchange information. Of the 55 CGOs found to exchange information, 61.82% did so using e-mail, but only 38.18% of them had to record the exchange in some fashion. Of the 44 CGO co-workers, 74.42% used e-mail to exchange information, while 48.84% did not have to record the exchange.

Telephone interviews were conducted with 18 of the survey respondents in order to gain clarification of initial survey responses as well as gain more detail behind each information exchange. The interviews revealed that information exchanges occur for the purpose of accomplishing some aspect of the subject's mission. A range of results are provided, including summaries of interviews, examples of exchanged information, and summaries of types of information exchanged. Finally, 10 abbreviated organizational charts are provided depicting organizations that exchange information.

**15. SUBJECT TERMS**
Information resource management; Information management; Knowledge management; GeoBase; Information exchange

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