Engineering Management
Field Project

AD-HOC CROSS-FUNCTIONAL WORKGROUPS

By

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Executive Summary

The situation found at Acme Inc is unique in that it constantly forms, disbands and reforms workgroups that contain multiple functional disciplines. While readily available for study at Acme Inc, these types of groups are also emerging across many business sectors; however, they form for significantly longer periods of time. Despite this difference many characteristics are similar: individuals are experts in their field, they have limited ability to form their own reputation and experience allows for them to understand others' expertise better.

The study at Acme Inc revealed that a robust system of technical data (in place procedures) common in initial training and their ability to make decisions like a team despite overwhelming evidence of it being a group, strengthened its ad-hoc cross functional workgroups to coordinate, cooperate and communicate better. It was also found that it lacked some common enhancers resident in highly successful cross-functional teams, the closest group with existing archived research. These included the presence of a cross-functional training program and the lack of a common vision.

There was little evidence of a cross-functional training program in any group with the exception of T7, and limited cross-functional assignments between maintenance and operations. Lack of a common goal manifested itself in the lack of awareness of the mission and vision statements and the overarching, broad and superlative nature of the statements themselves. Improvement in these areas that are enhancers to cross-functional teams may aid Acme Inc in performing better in the future.

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List of Terms and Acronyms

AFSC: Air Force Specialty Code
ACP: Alternate Command Post
EWO: Emergency War Orders
FSC: Flight Security Controller
LCC: Launch Control Center
LF: Launch Facility
MAF: Missile Alert Facility
MMOC: Missile Maintenance Operations Center
SCP: Squadron Command Post
SRT: Security Response Team
T7: Undefined additional training
TE: Tech and Engineering
WCP: Wing Command Post
WSC: Wing Security Control
WSA: Weapon Storage Area

Chapter 1 - Introduction

Cross functional, ad hoc and virtual teams (groups) have all become increasingly present in the current business environment. Traditional teams that stuck together for years and built upon each others' strengths have been replaced by contemporary groups that are a collection of individuals who have each put their commitment to themselves above their commitment to the team (Bushell). Acme Inc has been operating as a cross functional ad hoc workgroup since its inception in the early 1960s. Because of its long-standing operating practices, it is plausible that it could reveal some insight into how best to bring people together and to produce effective interactions. As the modern business environment continues to evolve away from the traditional team to a more individualistic work force able to come together in order to complete defined tasks and attain defined goals; it will be increasingly important to learn how to lead, form and conduct these types of working groups.

Cross-functional teams are defined by Google as a group of people with different functional specialties or multidisciplinary skills responsible for carrying out all phases of a program or project from start to finish. This definition would be slightly altered for cross-functional workgroups in order to eliminate the emphasis on responsibility of a program or project. It would read: a group of people with different functional specialties or multidisciplinary skills, responsible for carrying out tasks and attaining defined goals. Groups are not responsible for vision or goal definition. They are individually accountable and therefore could not all be accountable for the whole project.

Expanding the term to ad-hoc cross-functional teams would take into account the definition of ad hoc: often improvised or impromptu (businessdictionary.com). This would give us the working definition of: an improvised or impromptu group of people with different functional specialties or multidisciplinary skills, responsible for carrying out tasks and attaining defined goals.

Why not a team? Teams have shared leadership, accountability and work, distinctive purpose, open-ended meetings, direct/collective measures and real work (Katzenbach). These characteristics do not apply to the quickly formed workgroups in Acme Inc. The rank structure of the military clearly defines who is in charge. In Acme Inc, it could also be the person responsible for the success of the business, usually an operator. Work is not shared it is handed off and often happens in fragments, and the workgroup's purpose is broad. While there is some busy work, it is mostly real work … the only team characteristic that was displayed.

Interaction between agencies with specific functional focuses is unavoidable when doing business in Acme Inc. The different functional groups specialize in certain tasks and bring different perspectives, bodies of knowledge and preconceived stereotypes to decision points or processes. The different agencies or functional silos originally identified for this project were operations, security, maintenance, civil engineering (CE) and command post (CP). After performing observations and interviews, it was determined that CE, although it has its own career field, does not operationally act as a separate function. Instead it was often viewed by others as being similar to maintenance and was subsequently dropped from the list leaving a total of four functional areas to be studied.

This study aims to observe the interaction between cross-functional ad-hoc (adaptively planned) workgroups. The goal is to find out if Acme Inc is applying best practices to its interfaces between groups, to make recommendations when warranted and to observe the interactions in order to draw conclusions about how an ad-hoc workgroup should interact.

The study of each of these areas will include an observation period of one to two hours or the length of time to complete a task, interviews and a checklist analysis of several procedures. Observations were focused on workflow within a given function while interview questions were broken down into five main categories: perception and trust of other functions, understanding of commander's intent, depth of cross-functional training, knowledge resident in members of group and leader identity/necessity, in order to identify how groups interacted. Lastly the case study will highlight weaknesses and strengths that are resident in Acme Inc's cross functional interactions.

Chapter 2 - Literature Review

Functional Teams

Limited information on ad-hoc cross-functional workgroups was obtained. While often there was no literature on the topic, it appeared as though some articles used the term 'team' loosely by referring to a workgroup but calling it a team. Therefore, it was necessary to find a corollary topic where key observations and recommendations could be abstracted to ad-hoc cross-functional workgroups.

The subjects studied include cross-functional workgroup, cross-functional team and work-performance enhancers. These broader categories revealed common threads: reputation, coordination, knowledge sharing and multi-knowledge individuals.

Coordination and Cooperation

The ability for an organization to coordinate tasks and cooperate during the execution of those tasks greatly enhances the performance of the organization. Coordination is defined as the act of harmonizing the various activities to be performed within a firm to achieve a desired level of effectiveness and efficiency (Carr): whereas, cooperation is defined as the act of working together within a firm to achieve the firm's goals (Carr). When both coordination and cooperation are increased, the benefits are translated directly to the customer by delivering a higher quality product. In the case of Acme Inc, it translates to maximizing the effectiveness of the system by keeping more on alert with increased attention to safety and security: in other words, a safer more reliable product.

Both of these concepts are needed for different functional groups to be able to come together and effectively complete a task. During operations, the level of cooperation needed can very from task to task. Some tasks are simple and require one individual to relay information to another. Others can be more complicated where everyone in the discussion has one piece of the puzzle and you need to put it all together. As Carr points out, the more complicated the coordination, the bigger the dividends.

> The more complex and stressful the task is to perform the more coordination and cooperation can pay dividends. While simple rules, procedures and goals are sufficient in less complex business environments and for tasks involving little interdependence between functional areas and organizations, highly turbulent business environments and tasks involving high degrees of interdependence between functional areas and organizations require more coordination capability (Carr).

Therefore, the participants in the more complex interactions need to be working on individual skills that would increase coordination and cooperation.

How well organizations work together can depend heavily on the primary factors of: shared vision, culture of participation and job rotation. Individuals need to look for opportunities to rotate into different functional areas and seek out cross-functional training. Managers need to promote a culture of participation and mutual trust. Also they should try to keep turnover down and communicate the shared vision of the organization. It is imperative that these things happen because, "when functional areas coordinate and cooperate, they complete tasks or activities to benefit the entire organization rather than to further their own narrow interests (Carr)."

Direction for who is supposed to interact and what needs to be discussed is dictated by technical data. Different functional individuals can increase the coordination

aspect by observing standard phrases and interactions and by understanding the other functional groups

Knowledge Sharing

When performing tasks across large distances, the social process of knowledge sharing is distinctly different than when members have a high level of face-to-face interaction, the main conveyor of tacit knowledge. (Hong) Therefore, it is important to identify the factors that enable smoother interactions, so that the situation is better understood.

Hong and Vai point out four mechanisms to increase knowledge sharing amongst cross functional teams: shared understanding, learning climate, coaching and job rotation. In the early stages of team formation and task initiation, shared understanding is the most important. However, as work progresses on a project the other three mechanisms, the learning mechanisms, become more important.

Shared understanding takes on even more importance when cross-functional workgroups are continually forming, disbanding and reforming in response to various inputs from the system. The shared understanding ensures that all group members are working toward the same goal from the minute they answer the phone to when a decision is reached. Even though the learning mechanisms may not play a role in day-to-day interactions, they can be utilized and cultivated by individuals when they are not performing their primary duty.

A learning environment, with trust as the foundation, is what would need to be cultivated in order to empower individuals to begin learning from each other without

being prompted. Coaching and job rotation would need a program started in order to ensure it would be carried on into the future.

Reputation

The ability to work across functional boundaries can rely heavily upon the reputation of the individual and/or the functional group they belong to as well as their informal communication network. Role taking, interpersonal control and openness are traits that allow managers to build cross-functional relationships; when these traits are coupled with their position in the social structure it yields the members reputational effectiveness.

Role taking is the ability for someone to put themselves in the shoes of another individual. This is essential to working in cross-functional teams because the role taker can imagine the pressures on and viewpoints of individuals in other functions. This trait or capability ties into the idea of job rotation presented under knowledge sharing because when you are rotating through jobs it becomes easier to understand those functions that you have been a part of before.

Interpersonal control refers to the extent which an individual feels like they control the outcome of a situation. The higher the perception that the situation can be controlled, the more likely the individual is to attempt to build relationships to influence the outcome.

Openness is purely information sharing. The free flow of information between functional groups is a linchpin in understanding each other and for correctly framing a problem or developing a solution.

The social structure of the organization can differ from the formal organization. In order to be most effective in cross-functional teams, individuals need to be cognizant of where they are within the social structure, and since their position is at least partially controlled by their actions, they need to take steps to carve a desirable place in the social structure. In order to do this they must be centrally located, have easy access to other members and understand who controls the flow, if not control personally. "Individuals from a reputationally effective department may be perceived as more effective than their colleagues who represent units that are held in less esteem." (Bond)

Multi-knowledge Individuals

By successfully implementing knowledge sharing processes, multi-knowledge individuals become a byproduct of daily business routines. These individuals then become highly valued resources to the company because when members have knowledge of more than one function they are more effective communicators with the ability to increase information sharing and enhance group problem-solving skills.

In a study performed by Park, he concludes that the presence of multi-knowledge individuals will increase information sharing and time efficiency. Also, the information sharing will lead to innovative problem solving. However, there seems to be a trade-off between innovativeness and time efficiency because it is possible that if more information sharing is going on, it is taking more time to come to conclusions.

Despite the trade-off, it is clear that having multi-knowledge individuals as part of a team increases the organizations ability to communicate, which in turn increases knowledge sharing and coordination; two other cross-functional enhancers.

Chapter 3 - Procedure and Methodology

In order to capture the state of key cross-functional team ideologies and apply them to ad-hoc cross-functional workgroups, it was imperative to find out the viewpoints, knowledge bases and perceptions of each functional group. It was also important to observe these factors in action to validate what was perceived.

In order to accomplish this: interviews, observations and checklist reviews were accomplished. Each was performed for a specialized purpose.

Interviews

The interviews were performed in order to asses viewpoints on topics covered in the literature review from the individuals that are part of Acme Inc's interactions. They were asked questions that pertained to perception and trust of other functions, understanding of commander's intent, depth of cross-functional training, knowledge resident in members of their group and leader identity/necessity.

The interviews were split into two rounds. The first round was conducted in order to get an understanding of how the interactions were playing out in relation to the five main categories. Attachment 1 is the interview template used for all first-round interviews. In some interviews elaboration on previous questions made others redundant. In this instance it became pertinent to delete the redundant question(s) from the interview. Lastly, the information gathered from first-round interviews would be used along with observations and checklist reviews to come to conclusions about how Acme Inc interacts, the lessons that can be learned and the best practices that should be implemented.

The second round was less an interview and more focused questions that needed to be re-visited when other interviews revealed information not covered by previous ones. It was also used as a gage for the accuracy of the conclusions drawn from round one.

Observations

Observations were conducted of all the major work areas. These areas included: a launch control center (LCC), maintenance operations center (MMOC), security control center (WSC) and command post (WCP). The purpose of the observations was to identify how each work area functioned and disseminated the information that they had to other functions. Also, by understanding how they communicated with the other functions' problems tied to communications issues could be identified and solved. This also aided in identifying how information flowed in and out of the work center.

How the work area was organized was also observed. The placement of individuals indicated how the center was to communicate with each other; as a team of individuals or a more hierarchical set-up with one person clearly in charge. It also could reveal the speed at which information could be processed and how much information each work center had available to them.

Checklist Review

The checklist review was conducted to understand the type of interactions required in Acme Inc on a daily basis. The reviews excluded any checklists that may include sensitive information.

In order to characterize an average event in Acme Inc, 10 entering arguments were chosen and the resulting checklists were run. The only criteria for the entering arguments were that each category of entering argument must be represented. The

categories included: maintenance, security, local procedures and safety. For each

checklist, the total number of interactions were recorded in order to get an idea of how

often cross-functional interaction happens.

Chapter 4 - Results

Interviews

It was apparent throughout the interviews that cross-functional coordination and cooperation were good, but not great. Disputes had occurred in the past and these disagreements, although few, were the driving force behind most interviewee's negative opinions of the other groups. Also, leaders' intent, while present, was often either completely ignored, not known or wrongly defined. This, coupled with the absence of a substantial cross-functional training program, led to less-than-optimal cross-functional interactions.

It is important to note that despite these drawbacks it was reported that there were many quality exchanges between individuals that considered themselves experts in their own function, and that these exchanges yielded a quality result.

Perceptions and trust

It was mentioned earlier in the literature review that an individual needs to feel that they can have a certain amount of interpersonal control in order to enhance their reputation, a factor that can lead to more favorable cross-functional interactions. I have gathered, through interviews, that the organization you belong to can have a large influence on how you are perceived across functions throughout Acme Inc; however, with time and multiple positive experiences, working relationships can be developed with some of the more experienced members of the wing; giving the individual a limited amount of control over their reputation. Despite the way that different functions felt about each other, not one person interviewed indicated they had poor coordination or

cooperation across functions. The perceptions and trust levels between operations, maintenance, security and command post are outlined below.

Operators were divided into two groups in regards to the way they saw themselves. Some thought that they were the center of the mission or the leaders in the field while others referred to operators as people who thought they could never be wrong. It is interesting to note that all but one of the operators who gave the latter answer still answered at least one other question in the interview with a statement of the importance of the operators' role.

Maintainers seemed to have issues with trust, giving the operators an average of 3.25 out of 5. This seems to stem from the fact that the system reports what is going on at the sites to MMOC and the operators, as reported by maintenance personnel, are not always completely honest. They also feel that the operators don't trust them because of the questions they are always being asked, such as: are you referencing your technical data? They did, however, mention that there is a broad spectrum of operators and it is hard to tell if you are dealing with one that is competent. Security had a very high level of operator trust at 4.6, the highest average given to any group. They mentioned that operators always try to jointly come to conclusions when working together by using the security regulation, and talking about what they are referencing and what it says.

"Without maintenance there is no need for [Acme Inc]." This statement sums up the way maintenance is perceived by maintainers. They feel they are the most knowledgeable and can draw from a wider perspective to make more effective decisions. This could be the reason that security almost across the board said that maintainers often try to "pull a fast one" on them. However, they scored them just over a 4 average on the

1-5 trust scale, which may be attributed to the fact that they are co-located and can work face to face and build relationships. Operators often were aware of how maintenance felt about themselves, and while disagreeing most time, still had an appreciation for what they did on a daily basis.

The security group clearly perceives themselves as being looked down upon by the other groups. They feel that they are the largest group with the youngest age range. They feel their size and demography makes them a target to be the fall man when things are going wrong in the wing and that when it comes time to get funding for personnel incentives or for upgraded weaponry and systems, they are often overlooked. Despite these negative feelings of their own group every individual I talked to took pride in knowing how to do their job effectively, efficiently and right. Many made the comment that operators and maintainers overstep their bounds and may give security inputs. However, they know their job in and out and they will get it right.

Operators tended to view the security group with the lowest amount of trust, averaging just under 3 out of 5. They thought that the security group were often young and immature, but saw that their focus was in the right place, on security, and that they did their job well. Maintainers gave security a 4 out of 5 for trust, ahead of operators, and lauded them for their ability to perform security-related tasks. In the most in-depth break-down given by controller #3; WSC is rated highest with FSCs and -12 teams next and camp/fire teams at the bottom. This was echoed by controller #1 when he stated, "If they have a camper and it's [a low priority], they may want that taken care of."

WCP was viewed by the vast majority of interviewees to be purely information gatherers. They did not feel that they should be thought of as a different function or group

and one operator even commented that they should fall into the operations group. Most people, when they did comment on WCP, had a low opinion.

Leaders Intent

The mission and vision statements have been removed due to sensitivity issues.

While all it took to find the mission statement was a visit to Acme's web site, the vision statement was considerably harder to find.

The vision statement is currently posted in common areas throughout the wing and was promoted by middle managers at its time of inception. Unfortunately, there were months in-between these two events with zero promotional effort for either statement, except by the head of Acme Inc himself. Out of the interviews conducted in the month of April no one could recite either statement. This lack of unified effort may have caused an absence of general recollection and understanding. Fortunately, the posting of the two statements in most work areas and the re-attacks by mid-level leadership has prompted a resurgence; and most individuals interviewed in the month of May could recite one of the statements.

Unfortunately, while well known, the words seemingly have no meaning or worse, a different meaning to different people. While most interviewees confessed that the statements provided no guidance or direction and some indicated that they didn't put much stock into talk, there were others who fit the statements into their job. For instance, FSC #1 took the mission statement's reference to combat capability to mean that he was able to fight with his weapon, small arms, anywhere in the world. This ability for an individual to allow the statement to mean what they want it to mean indicates it is open to interpretation and falls into one of the many "don'ts" for vision statements.

These statements display many of the common vision statement shortcomings identified by Thompson, Strickland and Gamble. The shortcomings include: vague or incomplete, too broad and too reliant on superlatives. Even though there is a good base for a strategic vision statement, one that is more directional and focused would give the different functions of Acme Inc a shared path instead of each function defining its own.

Depth of Cross Functional Training

For Acme Inc, cross-functional training, while fledgling at its operating area, is robust in the sense that there is training prior to arrival. The training provided before arrival is not cross functional, but provides common understanding on corporate culture and allows the individual to become acclimated to the unique language and phrases that ease cross functional understanding when in the operating area. Providing a common ground of understanding for cross-functional groups does not appear to impact workforce diversity, which has similar makeup to the greater corporation. However, it does appear to inhibit the formation of cross-functional allies as the number of respondents who indicated they use informal communication was low with one interviewee indicating that you should stick with formal lines and the system will work it out.

Members of Acme Inc feel that they are not encouraged to learn about other functional groups and interviewees either had to think for a while and then gave an "I don't know… I guess I would," answer or did not know how to go about getting cross functional training or even a simple cross-functional visit to observe another group doing its normal work routine.

There were two operations interviewees that mentioned T7. This is a training day for operators that is supposed to provide greater field awareness and, by default, cross-

functional training. However, the program has been slow to develop and it is not mandatory training. It is only attended if the operations group manning is good enough to allow it. Although not mentioned by any interviewee, there is the ability for maintainers and operators to do an exchange; unfortunately, this program is not formalized and does not happen without leadership's intervention.

Cross-functional programs along with coaching, are essential to elevate the performance of any team or workgroup, improve reputations and develop multi-knowledge individuals. These are all beneficial to the environment at Acme Inc and since it is an area that has been neglected for so long, it should be a high priority to ensure these programs are started in every group.

Leader Identity/Necessity

Intuitively, one would think that having a clearly defined leader in an ad-hoc workgroup would be beneficial because it would provide a focal point for inputs and decision making; in addition to a single point of responsibility. However, I have found that to be far from the case found at Acme Inc. Most interviewees described an organization where the defined leader depends on the situation, and while most could not describe it more in depth, operator #4 seemed to explain what no one else could. "The defined leader defaults to the person with the most knowledge; it does not follow the normal chains of command." Essentially, the person with the best understanding of the situation and knowledge of the proper regulations or technical data will be the one who leads.

After discovering this and reviewing technical data, it is apparent that operator checklists try to provide them with the information and knowledge so that they can

assume the role of the leader. While this may not happen sometimes due to inexperience or oversight on the part of the operator, it appears to be the intention.

Also, it should be noted that while workgroups often rely on a leader; it is apparent that at Acme Inc, a decision would be made even if the leader identified with the above criteria is taken out of the equation. Leadership would then default to the next most knowledgeable individual.

Knowledge Resident in Members

Due to the high turnover of members at Acme Inc cross-functional workgroups, the necessity of understanding what individual members meant to those groups became apparent. Could any MMOC controller team replace another with minimal difference? Would it be possible for a four-year operator to leave and be replaced by someone with six months experience?

The answer is yes despite the fact that within the maintenance and security functions there are multiple areas of expertise. Maintenance members can be either X1, X2 or X3, each dealing with different tasks; while security can have experience with SRT team, camper team or FSC. Each group has a core set of knowledge that is what is needed to work with the other groups. This set of knowledge is further reinforced with mentorship and professional study programs, creating functional experts.

The flexibility goes back to the fact that most interviewees felt that 99 percent of everything they needed to do their job could be found written in regulations or technical orders and that there were always individuals they could contact within their group to solve a problem or to get the answer from. For example, there are always many operators

working; therefore, if one can't figure out how to handle a situation, a quick phone call or a conference would allow all individuals to come together and make the right decision.

Observations

Whenever people can come together face-to-face it is beneficial; therefore, co-locating security and maintenance is a positive aspect of the Acme Inc set-up. It is unavoidable that the operators and maintenance teams are geographically separated; however, the multiple means of communication mean that those teams and individuals can be reached with a phone call.

Each individual work center is set up so no one person needs to make a decision alone. They work side-by-side to facilitate smoother communication and often have access to duplicate information so that both individuals can independently process the same information.

The fact that every work center places more value on job knowledge than on pay grade indicates that the goal is to ensure the proper decision is reached; however, the pay system has not enabled those people more adept at their job to reap the rewards. They would continue to be underutilized if Acme Inc did not put an emphasis on knowledge and allow them to take on responsibility above their pay grade.

Each function had an apparent sense of pride in their ability to perform their function. This translates into a powerful desire to make decisions that were in the best interest of safety and reliability; however, each approached issues with their own bias and since there was not a continuing dialogue between individuals, the issues often dissolved into conflict. Conflict was negated when conversation between groups was centered around regulations instead of deteriorating into a right or wrong argument.

Checklist Review

A total of 10 checklists were reviewed which yielded an average of three interactions per checklist. Checklists are run often which indicates that cross-functional interactions are happening at a very high rate. Given this high rate, it seems that the interviewees were correct in there assessment that coordination and cooperation are present when working across functions.

Lessons Learned

Lessons can be learned from Acme Inc. It is apparent that the continuous training and mentorship creates highly knowledgeable functional specialists who can perform critical tasks effectively. This is facilitated by a robust system of technical data in place to let them know when to interact and what they should interact about. Also facilitating the culture is a training system that provides common vocabulary and experience, a homogeneous experience, so that within the groups, individuals are as close to being interchangeable as possible. It was also revealed that subject knowledge along with experience and situational understanding dictate leadership, a trait that could be construed as shared leadership. Shared leadership is a team trait and would therefore indicate that improving those things that help teams might also help Acme Inc's ad-hoc cross-functional groups.

Acme Inc would benefit from a comprehensive cross-functional training program and a clear mission/vision statement. These two areas were the large holes in an otherwise enviable cross-functional environment. Building multi-knowledge individuals, increasing coordination, creating positive perceptions between groups and allowing individuals to build reputations amongst their cross-functional colleagues are all results

that would come out of the above mentioned programs. These results would allow for

increased coordination capability and smoother interactions during operations.

Chapter 5 - Suggestions for Additional Work

For anyone interested in continuing work on cross functional teams the following endeavors are suggested:

I. Develop a comprehensive cross functional training program. Since a robust one does not currently exist, any training program with substance would be an improvement, but a good one would meet certain criteria. It would be applied across all three major functions: it would include open and honest discussion, to improve perceptions, and it would spark genuine interest in other groups. Expanding the exchange between operations and maintenance into a formalized program, making T7 mandatory for operators and developing similar programs in the other functions would be a start.

II. Implement mission and vision statements that have more detail and do not use superlatives. Both statements must provide overarching guidance to unite all groups and should be accompanied by a change plan.

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Attachment 1: Questions For Cross Functional Teams

(PT)How do you perceive your own group within the organization?

(PT)How do you perceive other groups?
- Ops
- Maint
- Sec
- WCP
- Safety

(PT)How much do you trust other groups?
- Ops
- Maint
- Sec
- WCP
- Safety

(PT)Does the level of trust vary by individual?

(PT)Would you ever perform a task based on an input from another agency without being 100% sure?

(T)Have you ever used informal communication, across functional lines, to come to a decision?

(LI)What is the mission of Acme Inc?

(LI)What is the vision of Acme Inc?

(LI)What do you (your work area) do to support the above questions?

(T)Are members of your work area encouraged to learn about other functions of Acme Inc? (ex. Formal training)

(T)How would you learn about another functional group in Acme Inc?

(PT)How well do you coordinate and/or cooperate with other functional groups?

(LI)Do you work toward any specific goals?

(L)When dealing with a situation in the Field who is the leader? Within your function and across functions.

(L)If the identified leader was not available would a decision be made?

(L)How important are the decisions you are making?

(L)How lenient are the criteria?

(K)If someone left your group would the knowledge of the group be significantly reduced?

(PT)If someone were to leave another function would your opinion of that function change?

(K)Can you read on paper everything you need to know to perform your job?

* If a question was not asked during an interview it was deleted from the specific Attachment.

Attachment 3: WCP Observation

The observation of the Acme Inc CP took place on March 12, 2010 between 1430 and 1530 hours. The two CP controllers sit at a work station with multiple communications platforms One of the controllers is designated as the senior controller and is in charge of the shift. The senior controller is not always the highest raking member, but could instead be the member with the most experience.

The on duty controllers defined themselves as the eyes and ears of the wing commander and need to be certified by him before they can perform controller duties. Their primary function is to enable the flow of information into throughout and out of Acme Inc. One CP interviewee said, "5 min was too long to reach the commander. It needs to be 1 min or less." Indicating that they have a fast response time.

Attachment 4: WCP Interviews

Both WCP controller #1 and #2 were former operators whereas controller #3 is a command post controller by AFSC. It was necessary to interview all members at the same time because controllers #2 and #3 were on console and controller #1 was acting command post commander.

(PT)How do you perceive your own group within the organization?
Eyes and ears of the wing commander. Knowledgeable and informative.

(PT)How do you perceive other groups?
Mainly consume and pass information for relay to wing commander; no need to interpret the information.

(PT)How much do you trust other groups (1-5)?
All information is trusted because as a controller there is no need to analyze it. It is for relay. Not all information is for the wing commander sometimes it is for higher organizations.

(PT)Have you ever used informal communication, across functional lines, to come to a decision?
Very formal interactions, it is all recorded and often involves high ranking officers.

(LI)What is the mission of the Acme Inc?
All members of wing command post were asked about the mission/vision before it was publicized; they are very familiar with it and understand it. The only one who had a hard time putting it in his own words was WCP controller #3.

(LI)What is the vision of the Acme Inc?
""

(LI)What do you (your work area) do to support the above questions?
Central hub of information for information to flow to decision makers.

(T)Are members of your work area encouraged to learn about other functions of Acme Inc? (ex. Formal training)
EWO is required to be known. Also, new members must go on a WSA tour.

(LI)Do you work toward any specific goals?
100% accurate communication in a timely manner.

Attachment 5: Missile Maintenance Operations Center Observations

The observation of the Missile Maintenance Operations Center (MMOC) was conducted on March 20, 2010 between 1300 and 1530 hours. MMOC is manned by a 2-4 person team consisting of 1-3 "forwards" and 1 "senior." It is co-located with Trip Coordination and Control (TCC) and Security Control (WSC). Experience dictates who the senior controller is, rank is completely irrelevant, someone who is higher ranking will not be moved into the senior position without first demonstrating a high level of competence. During controller #1's interview he commented:

> The senior controller not only has to have technical proficiency, but also needs to be able to mentor and "catch" the forward's mistakes. The senior controller needs to have a level of awareness that extends beyond MMOC because the maintenance group commander will be briefed twice a day.

Controller #2 also lamented that MMOC was turning into a "dumping ground [for bad maintainers]." If true, based on the limited research performed, this could be detrimental to increasing the quality interactions between functions in the field, specifically between maintenance and others.

MMOC can be manned by any former maintenance personnel to include:

X1 – Electronics

X2 – Systems

X3 – Heating Ventilation and Cooling

Therefore, the knowledge resident in each controller can vary. To attempt to reduce the variation MMOC controllers are required to receive initial skills training, which primarily includes familiarization with their primary technical data.

MMOC is the focal point through which other functions communicate with the maintenance group. They not only collect and pass information coming out of the field

they disseminate information, within their function. Without MMOC coordination of maintenance activities would be haphazard and other groups would not have a 24 hour point of contact.

Attachment 6: MMOC Controller #1 Interview

He has worked at MMOC for 1 year and 2 months and his core AFSC is X3

(PT)How do you perceive your own group within the organization?
[Maintenance] is more knowledgeable than the other groups because they understand how the system works. They also bring 4 or 5 different perspectives [from a single function.]

(PT)How do you perceive other groups?
- **Ops** – [arrogant] when there is a disagreement they never listen to what maintenance is saying.
- **Sec** – More knowledgeable [than ops]. Although they do have a narrow focus [security].
- **WCP** – N/A

(PT)How much do you trust other groups (1-5)?
- **Ops** – 3 at highest, sometimes when information is just relayed it is seamless, but sometimes operators "forget" [to do things] and give wrong information. [It appears as there is a lot of friction between these two groups as controller #1 became visibly agitated, red face/arms crossed, when recalling a few experiences where an operator relayed incorrect status or he caught them in a lie.]
- **Sec** – 4, trained very well
- **WCP** – 0, when asked for paperwork for 5 sorties, 3 did not get processed

(PT)Does the level of trust vary by individual?
WCP is person specific sometimes I ask for individuals by name because you know they will get the paperwork done. Of course it varies a little bit when dealing with other groups but not that much.

(PT)Would you ever perform a task based on an input from another agency without being 100% sure?
No, Technical Data drives everything; well maybe if it is just a notification of something that doesn't really matter. He would take the word of another maintainer.

(PT)Have you ever used informal communication, across functional lines, to come to a decision?
No, but within the function… yes. Sometimes you need information that and X1 or X2 would know.

(LI)What is the mission of Acme Inc?
Can't state it verbatim, but knows the gist of it: Deterrence, keeping the system on alert.

(LI)What is the vision of Acme Inc?
Didn't know

(LI)What do you (your work area) do to support the above questions?
Was not asked, interviewee stated that they are the link between the maintenance being done and leadership.

(T)Are members of your work area encouraged to learn about other functions of Acme Inc? (ex. Formal training)
X1,X2,X3s are different… encouraged to know about other maintenance functions

(LI)Do you work toward any specific goals?
Keep missiles on alert
(L)When dealing with a situation in the Field who is the leader? Within your function and across functions.
There is no leader your tech data will tell you what to do. It is annoying when Operations questions MMOC's decision and that decision was based on tech data.

(L)If the identified leader was not available would a decision be made?
When tech data can't answer the question Tech and Engineering (TEF) gets involved.

(L)How important are the decisions you are making?
Varies

(L)How lenient are the criteria?
Tech data is not lenient

(K)If someone left your group would the knowledge of the group be significantly reduced? Not so much knowledge, but efficiency. You can always fall back on your tech data, but how long it takes you to respond depends on how familiar you are.

(PT)If someone were to leave another function would your opinion of that function change? Based on previous questions this one was not asked.

(K)Can you read on paper everything you need to know to perform your job?
It is helpful to be an X3

Attachment 7: MMOC Controller #2 Interview

Has worked at MMOC for 2 years his core AFSC is X2 and his previous assignment was as a team member on a maintenance team (MMT).

(PT)How do you perceive your own group within the organization?
Maintenance is more knowledgeable, quality assurance can help, [maintenance] keeps the system 'up' rate where it is.

(PT)How do you perceive other groups?
- **Ops** – liked it when they came and briefed at Ops Pre-Departure.
- **Sec** – Camper team for priority 3 maintenance, they want to take care of their people, but it may not be more important to maintenance. When asked if their priorities were not the same he answered affirmatively.
- **WCP** – N/A
- **Safety** – N/A

(PT)How much do you trust other groups (1-5)?
- **Ops** – 2, Maintenance can check things that they [operators] do.
- **Sec** - 5
- **WCP** – Don't trust at all, stuff doesn't get done (brief everyday), when asked if it would be beneficial to be co-located like WSC he responded that they use to be and it was easier because when they have to pass information they would just walk next door and now they have send it to them by other means.
- **Safety** – N/A

(PT)Does the level of trust vary by individual?
Yes, "You are more patient with someone you know."

(PT)Would you ever perform a task based on an input from another agency without being 100% sure?
No

(PT)Have you ever used informal communication, across functional lines, to come to a decision?
No, because knowledge in other functions is typically homogeneous and when there is someone on console at WSC or at a capsule he deals with them as if they are the expert. When asked about maintenance he said he would sometimes reach out to other AFSCs within maintenance.

(LI)What is the mission of Acme Inc?
Don't know. Deterence.

(LI)What is the vision of Acme Inc?
Didn't know

(T)Are members of your work area encouraged to learn about other functions of Acme Inc? (ex. Formal training)
Yes, I'm taking over as the trainer and plan on implementing training to include other maintenance functional areas as well as other functional groups.

(LI)Do you work toward any specific goals?
Keep missiles on alert
(L)When dealing with a situation in the Field who is the leader? Within your function and across functions.
Tech Data Wins!

(L)If the identified leader was not available would a decision be made?
Tech and Engineering (TEF) gets involved.

(K)If someone left your group would the knowledge of the group be significantly reduced? Depends on previous career field X1 uses MMOC's primary technical guidance and they tend to come in being able to use it well. Efficiency declines, it takes about 3-6 months to get caught up,

(PT)If someone were to leave another function would your opinion of that function change? Based on previous questions this one was not asked.

(K)Can you read on paper everything you need to know to perform your job?
Field experience does come into play when helping other people. He then gave an example where another X2 was stuck near the bottom of the missile and he was able to give guidance not contained in tech data to get him out of a bad situation.

Attachment 8: MMOC Controller #3 Interview

Has worked at MMOC 2 times in his 17 year career. Currently he has only been there for a couple of months. His core AFSC is X3 and his previous assignment was as a team Chief.

(PT)How do you perceive your own group within the organization?
Mission statement is about maintenance. If maintenance doesn't fix the systems they don't go… it is very important.

(PT)How do you perceive other groups?
- **Ops** – There are good operators and there are some that say I'm gonna do whatever I want because I am management.
- **Sec** – WSC and MMOC work hand in hand. The 12 teams are very good, but some don't give a crap.
- **WCP** – No comments

(PT)How much do you trust other groups?
- **Ops** - 4
- **Sec** – Missile Security, 4; field security support 3; Support, 5
- **WCP** – No comments

(PT)Does the level of trust vary by individual?
Yes, Certain Operators/Cops that I trust, but there are a lot of each group.

(T)Have you ever used informal communication, across functional lines, to come to a decision?
Yes, not very often though…it's not the right thing to do, but it can be helpful.

(LI)What is the mission of Acme Inc?
Verbatim

(LI)What is the vision of Acme Inc?
Verbatim

(LI)What do you (your work area) do to support the above questions?
MMOC is basically the air traffic control for maintenance. They keep the system going.

(T)Are members of your work area encouraged to learn about other functions of Acme Inc? (ex. Formal training)
Career progression and the exposure during your multiple experiences provide opportunities and necessitate learning. Maintenance shops have the technical expertise.

(PT)How well do you coordinate and/or cooperate with other functional groups?
We have no choice but to cooperate, the mission needs to get done.

(LI)Do you work toward any specific goals?
Effective maintenance

(L)When dealing with a situation in the Field who is the leader? Within your function and across functions.
Situation dependent, it can range anywhere from the senior controller to the head of maintenance to the head of the entire organization, if it is a really bad situation. [although I asked follow-on questions about when they needed to interact with other groups it seemed almost unfathomable that anyone else would make the decision.]

(L)How important are the decisions you are making?
They are important

(K)If someone left your group would the knowledge of the group be significantly reduced?
No, you are supposed to be passing info on to newer maintainers so that your departure has less of an impact.

(PT)If someone were to leave another function would your opinion of that function change?
No

(K)Can you read on paper everything you need to know to perform your job?
Everything is in the T.O. However, with experience you get a sixth sense about what is going on.

Attachment 9: MMOC Controller # 4 Interview

Has worked at MMOC for 1 year his core AFSC is X1 and his previous assignment was as a team chief on an electronics team

(PT)How do you perceive your own group within the organization?
Without maintenance there is no need for a missile wing.

(PT)How do you perceive other groups?
- **Ops** – Broad spectrum of people to deal with
- **Sec** – Sub human, good at security, sometimes drag their feet (not timely), could provide better support
- **WCP** – Support element

(PT)How much do you trust other groups?
- **Ops** - 4
- **Sec** - 3
- **WCP** – N/A

(PT)Does the level of trust vary by individual?
Yes

(T)Have you ever used informal communication, across functional lines, to come to a decision?
No, just talk with teams and individuals directly and go through the proper channels and the job will get done.

(LI)What is the mission of Acme Inc?
Verbatim, the only thing this helps is that it explains why our job is important.

(LI)What is the vision of Acme Inc?
Verbatim

(LI)What do you (your work area) do to support the above questions?
Master coordinators

(T)Are members of your work area encouraged to learn about other functions of Acme Inc? (ex. Formal training)
Just by nature of business you have to deal with other function. The longer you're in the more you have to coordinate. [what he seems to be getting at and it was clarified with follow-on questions is that there position is what encourages them to learn things that they need to know in order to accomplish the mission]

(PT)How well do you coordinate and/or cooperate with other functional groups?
Effectively

(LI)Do you work toward any specific goals?

Get maintenance done and get the maintainers home on time.

(L)When dealing with a situation in the Field who is the leader? Within your function and across functions.
Depends on the situation

(L)How important are the decisions you are making?
Very important

(K)If someone left your group would the knowledge of the group be significantly reduced?
Depends, lots of knowledge in a few people that recently retired so currently there is a sense of a loss of job knowledge.

(PT)If someone were to leave another function would your opinion of that function change?
Not one person

(K)Can you read on paper everything you need to know to perform your job?
There are intangible aspects to the job. Even if it's in the book you need to be able to find it.

Attachment 10: LCC Observation

Observation of the LCC took place during the 24 hour time period starting on the 10 of May at 11:38 and running to the 11 of May at 11:49. I was part of the two person crew during the stated period of time.

The LCC is physically isolated from all other agencies; underground and behind two blast doors. Despite the physical seclusion there are a significant number of communication options available. During the 24 hour period there were two primary personnel configurations. The fist was with both operations members awake sitting next to each other at the console. The second was one member in rest status and the other at the console.

When the crew is optimally configured, both members awake, communication between members are facilitated by their side by side arrangement; much like MMOC, WSC and WCP. Also, crew members have the ability to listen to each others conversations or see what each is doing on the console screens. They can also split up to facilitate a heavier work load.

When one member of the crew is asleep the other crew member is responsible for monitoring all weapon system indications and communication platforms. A single crew member configuration does not happen at a standard time and the crew must decide how to optimally manage their sleep shifts so that critical events and busy periods are covered by both members.

Attachment 11: Operator #1 Interview

He is a Deputy with 1.5 years experience. He attended pilot training for a short period of time prior to becoming an operator.

(PT)How do you perceive your own group within the organization?
We do alright

(PT)How do you perceive other groups?
- **Maint** – The best, results oriented organization. They need to get their job done no matter what. More hands on day-to-day... they get it done.
- **Sec –** They are immature
- **WCP –** The melting pot of everyone who couldn't cut it in their own job
- **CE** – Do the dirty jobs, more support oriented than maintenance

(PT)How much do you trust other groups?
- **Maint** – 4, initial interaction determines trust level. The maintenance member should be aware of standard operating procedures.
- **Sec** – 2, immature
- **WCP -** 1
- **CE** – 3.5

(PT)Does the level of trust vary by individual?
Yes, especially in maintenance (see response to maint above).

(PT)Would you ever perform a task based on an input from another agency without being 100% sure?
Yes, but I would have to be close to 100%.

Have you ever used informal communication, across functional lines, to come to a decision?
Definitely, the guys in the field know what's going on. Also, operations guys that use to be maintainers are good guys to ask.

(LI)What is the mission of Acme Inc?
Don't know. (In own words) Provide no worries for the American People

LI)What is the vision of Acme Inc?
Equip train and deploy to LCCs

(LI)What do you (your work area) do to support the above questions?
Show up. Make sure that I am trained to perform tasks

(T)Are members of your work area encouraged to learn about other functions of Acme Inc? (ex. Formal training)

No, because it would be a day off or operators would be in the way of other functions if they tried to learn about them.

(T)How would you learn about another functional group in Acme Inc?
Ask a flight commander to point you in the right direction. (seemed to be making a guess)

(PT)How well do you coordinate and/or cooperate with other functional groups?
We get along, without technical orders things would unravel.

(LI)Do you work toward any specific goals?
Getting the job done without error; my job is to monitor the system and make sure the system is optimally configured.

(L)When dealing with a situation in the Field who is the leader? Within your function and across functions.
Changes, depends on what's going on. Rarely it is operations.

(L)If the identified leader was not available would a decision be made?
Different groups have support systems. Also, operations will step in and control transition.

(L)How important are the decisions you are making?
Relatively unimportant…varies

(K)If someone left your group would the knowledge of the group be significantly reduced?
No, knowledge would still be there, but it takes a lot of effort to train someone to the level of someone who leaves.

(PT)If someone were to leave another function would your opinion of that function change?
No

(K)Can you read on paper everything you need to know to perform your job?
Can't read everything on paper, a lot is learned through repetition and experience.

Attachment 12: Operator #2 Interview

A Commander with 2.5 years experience, he remotely piloted unmanned aerial vehicles for 2 years prior to becoming an operator.

(PT)How do you perceive your own group within the organization?
Center of mission. What executes mission (possibly most important). Everyone else should focus on increasing operations effectiveness.

(PT)How do you perceive other groups?
- **Maint** – Consider themselves to be the center of the mission, but they're not. One third of the base ops trifecta.
- **Sec** – Focused on their part of the mission / are relied upon to execute certain tasks without in depth knowledge from ops (ex. Tactical situations). With maintenance there is a certain give and take. Security is the other third of the trifecta.
- **WCP** – part of ops
- **CE** – part of maintenance

(PT)How much do you trust other groups?
- **Maint** – 3
- **Sec** – 3
- **WCP -** 5
- **CE** – 2

(PT)Does the level of trust vary by individual?
Consider the whole organization not individuals

(PT)Would you ever perform a task based on an input from another agency without being 100% sure?
Yes, doesn't know everything – going off of expert (More inclined to trust when new to the job.)

Have you ever used informal communication, across functional lines, to come to a decision?
In same function, yes. Sometimes you call people in ops that have spent time in maintenance or security.

(LI)What is the mission of Acme Inc?
Knew it verbatim

(LI)What is the vision of Acme Inc?
Something similar to the mission. Not much stock in either.

(LI)What do you (your work area) do to support the above questions?
Central organization provides mission

(T)Are members of your work area encouraged to learn about other functions of Acme Inc? (ex. Formal training)
Certantly, self encouragement. Extrinsic motivation is what drives behavior of ops group. This hinders intrinsically motivated people.

(T)How would you learn about another functional group in Acme Inc?
Go with a trip out to the field that you set up yourself.

(LI)Do you work toward any specific goals?
To pass inspections and tests.

(L)When dealing with a situation in the Field who is the leader? Within your function and across functions.
Operations person. May differ to someone else for expertise

(L)If the identified leader was not available would a decision be made?
Yes

(L)How important are the decisions you are making?
Extreme consequences for poor decisions, but the decisions are so routine that they feel inconsequential.

(K)If someone left your group would the knowledge of the group be significantly reduced?
Yes, experience in the minutiae of details makes references easy to find. A lot of odd situations can arise.

(PT)If someone were to leave another function would your opinion of that function change?
No

(K)Can you read on paper everything you need to know to perform your job?
Yes, but in a poor way. Initial training is deficient. If initial training was more robust operators should be good when they got here. 56 changes to a single set of technical data is also outrageous.

Attachment 13: Operator #3 Interview

A Instructor, he has 3.25 years experience

(PT)How do you perceive your own group within the organization?
Accomplish the mission, everyone supports the operations group. The operations group commander is a big influence on other groups to ensure that this is maintained.

(PT)How do you perceive other groups?
- **Maint** – Knowledgeable, know what they are doing
- **Sec** – Ocassionally oversteps their boundaries, their flight leadership trys to run the field.
- **WCP** – Mostly former operators, information relay

(PT)How much do you trust other groups?
- **Maint** - 5
- **Sec** - 3
- **WCP** - 4

(PT)Does the level of trust vary by individual?
No

(T)Have you ever used informal communication, across functional lines, to come to a decision?
Other operators definitely, I know people in other groups that I could call

(LI)What is the mission of Acme Inc?
Answered verbatim

(LI)What is the vision of Acme Inc?
Did not know

(LI)What do you (your work area) do to support the above questions?
Provide Deterrence

(T)Are members of your work area encouraged to learn about other functions of Acme Inc? (ex. Formal training)
T7, this is not an effective way to learn though. Going and seeing what the other functions do would be useful.

(T)How would you learn about another functional group in Acme Inc?
Contact Someone you know (in the other functional group)

(PT)How well do you coordinate and/or cooperate with other functional groups?

Both are OK with WSC or MMOC, have had experiences such as WSC relaying incorrect status.

(LI)Do you work toward any specific goals?
Become the best operator I can be

(L)When dealing with a situation in the Field who is the leader? Within your function and across functions.
The operator

(L)If the identified leader was not available would a decision be made?
Yes

(L)How important are the decisions you are making?
Situationally important. It runs the whole spectrum.

(K)If someone left your group would the knowledge of the group be significantly reduced?
The group in general – no. A specific work section – yes.

(PT)If someone were to leave another function would your opinion of that function change?
Yes

(K)Can you read on paper everything you need to know to perform your job?
No, need to establish a core of trusted people.

Attachment 14: Operator # 4 Interview

An instructor with 2 years experience.

(PT)How do you perceive your own group within the organization?
The dominate force

(PT)How do you perceive other groups?
- **Maint –** The #2 group behind the operations group
- **Sec –** highly manned, too fluid, who is in charge of what
- **WCP –** They don't do much

(PT)How much do you trust other groups?
- **Maint** - 3
- **Sec** - 2
- **WCP** - 1

(PT)Does the level of trust vary by individual?
Only by organization

(T)Have you ever used informal communication, across functional lines, to come to a decision?
Yes, will still call a knowledgeable agency, however, it is not a required communication and the person being contacted is not a previous acquaintance.

(LI)What is the mission of Acme Inc?
Verbatim

(LI)What is the vision of Acme Inc?
Verbatim

(LI)What do you (your work area) do to support the above questions?
Solve problems delegated to me and those not delegated to anyone else.

(T)Are members of your work area encouraged to learn about other functions of Acme Inc? (ex. Formal training)
T7, slowly improving. It is moving to more of a story line approach as opposed to the random guest speaker.

(T)How would you learn about another functional group in Acme Inc?
Talk with people at the club.

(PT)How well do you coordinate and/or cooperate with other functional groups?
No excess relationships, but common communication is good.

(LI)Do you work toward any specific goals?
The general goals are deterrence and global strike
(L)When dealing with a situation in the Field who is the leader? Within your function and across functions.
Who's in charge follows the levels of knowledge and not the normal progression

(L)How important are the decisions you are making?
Extremely important.

(K)If someone left your group would the knowledge of the group be significantly reduced?
Yes, it would impact both the immediate work area and the group as a whole

(K)Can you read on paper everything you need to know to perform your job?
No, Social norms, receptiveness to unique individual needs and associations are all areas that must be learned in order to excel.

Attachment 15: Operator # 5 Interview

Instructor with 2 years experience.

(PT)How do you perceive your own group within the organization?
Well integrated with other groups… we have a larger scope.

(PT)How do you perceive other groups?
- **Maint** – Generally knowledgable/helpful, has recently had an issue with unprofessional MMOC behavior
- **Sec** – Good at their job, but often come off as lazy: tone of voice, reluctant to do their job, falling asleep at their post. They are also young
- **WCP** – Not much interaction

(PT)How much do you trust other groups?
- **Maint** - 4
- **Sec -** 3
- **WCP** – N/A

(PT)Does the level of trust vary by individual?
Yes

(T)Have you ever used informal communication, across functional lines, to come to a decision?
No

(LI)What is the mission of Acme Inc?
Did not know

(LI)What is the vision of Acme Inc?
Did not know

(LI)What do you (your work area) do to support the above questions?
We go on alert and train crew members

(T)Are members of your work area encouraged to learn about other functions of Acme Inc? (ex. Formal training)
Maybe Maintenance because when you write training scripts you need to validate procedures so that they are as close to real life as possible.

(T)How would you learn about another functional group in Acme Inc?
Not sure, talk with a manager I guess.

(PT)How well do you coordinate and/or cooperate with other functional groups?
Fairly well.

(LI)Do you work toward any specific goals?
Make sure the job is done correctly and efficiently

(L)When dealing with a situation in the Field who is the leader? Within your function and across functions.
Operators

(L)If the identified leader was not available would a decision be made?
Yes

(L)How important are the decisions you are making?
Very important – anything with this system is very important

(K)If someone left your group would the knowledge of the group be significantly reduced?
No, think we do a good job of training our replacements

(K)Can you read on paper everything you need to know to perform your job?
Most things… some things you need to know and they are not written down.

Attachment 16: Operator # 6 Interview

Deputy with 11 months experience.

(PT)How do you perceive your own group within the organization?
Operators always think they are right and they think they are better than the other groups.

(PT)How do you perceive other groups?
- **Maint** – You often have to ask specific questions in order to get the information you need. There are several communication barriers. Often the team at site and the MMOC do not effectively communicate.
- **Sec** – High opinion, I think they are scared of making a mistake, better at communicating with ops, usually very young
- **WCP** - Useless

(PT)How much do you trust other groups?
- **Maint** – 3, gap between maintenance in field and MMOC
- **Sec** - 4
- **WCP** - 3

(PT)Does the level of trust vary by individual?
No

(PT)Would you ever perform a task based on an input from another agency without being 100% sure?
No

(T)Have you ever used informal communication, across functional lines, to come to a decision?
Yes, but security forces initiated the communication.

(LI)What is the mission of Acme Inc?
Verbatim

(LI)What is the vision of Acme Inc?
Verbatim

(LI)What do you (your work area) do to support the above questions?
Maintain a good attitude

(T)Are members of your work area encouraged to learn about other functions of Acme Inc? (ex. Formal training)

Yes, recently there was an opportunity to go see maintenance activity [this program was initiated by me after my first few interviews… it was painfully obvious that T7 was not fulfilling the needs of cross functional training and there was a genuine interest]

(T)How would you learn about another functional group in Acme Inc?
Ask the other functional personnel questions while out on alert.

(PT)How well do you coordinate and/or cooperate with other functional groups?
We do these things well

(LI)Do you work toward any specific goals?
Don't fuck up and watch out for other people

(L)When dealing with a situation in the Field who is the leader? Within your function and across functions.
EWO (the concept), it is the most important part of the job

(L)If the identified leader was not available would a decision be made?
No, without EWO there is not proper prioritization

(L)How important are the decisions you are making?
Very important especially at the SCP

(K)If someone left your group would the knowledge of the group be significantly reduced?
No

(PT)If someone were to leave another function would your opinion of that function change?
No

(K)Can you read on paper everything you need to know to perform your job?
No, lots of difficult scenarios, it's impossible to train for them all.

Attachment 17: WSC Observation

Wing Security Control is comprised of 3 different sections: Trip Coordination and Control (TCC), Storage Area (WSA) monitor and wing security. For the purpose of this paper only the later will be discussed as they are part of the ad-hoc cross functional workgroups and the other two areas are not.

The observation of WSC took place on May 20th, between the hours of 9:00 PM and 11:00 PM. The two field controllers work in a sectioned off area behind TCC and the WSA monitor. One is designated as the senior controller and is the one who has more experience and has demonstrated a better grasp of knowledge. Unlike MMOC and the LCC they do not have status tracked automatically (the system reports faults and other changes directly). They track their teams by noting departure and arrival times in a word document. Like both other work centers they sit next to each other in a configuration that allows for better flow of information.

During my observation a request was put in by MMOC for a SRT team to relive a maintenance team that was at a site that could not get a reset of the security system. In this instance I observed both the benefit and detriment of having co-located work centers. The co-location enable a quick response to the request and the MMOC controller was able to appeal to the WSC controllers on a more personal level than he would have been able to over the phone. However, after questioning the WSC controllers I found that they felt that they should not have had to relieve the maintenance team. They felt the request came too early because they still had enough time to wait for the proper security team to relieve them and make it back to base. When asked why they complied, they answered that they have to work with the MMOC controllers and they feel like it is important to

keep a good report with them; and even though it was not admitted I felt as if rank and group reputation may have played a role. The MMOC controller outranked the WSC controller by two grades and the reputation of the maintenance group is that they are knowledgeable and often know more than security about what is going on in the field.

It was also interesting to note that on the night of my observation there was what was called a floater also sitting behind the two controllers. This individual enabled the two controllers to rotate out and go to the gym or take a short nap.

Attachment 18: WSC Controller # 1 Interview

He has worked as a SRT member/leader and FSC and now a WSC controller. He was in the field for about 4 years and has been in WSC for 1.5 years.

(PT)How do you perceive your own group within the organization?
Largest group on base, 4 squadrons with 1200 people; cops get looked down upon.

(PT)How do you perceive other groups?
- **Ops** – I've had one disagreement since I've been in wing security, but overall we are able to come together and reach the right conclusions.
- **Maint** – Broad spectrum of people, sometimes they try to pull a fast one on us
- **WCP** – used to patch people

(PT)How much do you trust other groups?
- **Ops -** 5
- **Maint** - 4
- **WCP** – N/A

(PT)Does the level of trust vary by individual?
Ops doesn't vary, but since we work in the same area as MMOC controllers you can form better opinions of them.

(LI)What is the mission of Acme Inc?
Never even heard it

(LI)What is the vision of Acme Inc?
Nope

(LI)What do you (your work area) do to support the above questions?
We get everything going. Coordinate [security] responses to situations and we the right people out there as fast as possible.

(T)Are members of your work area encouraged to learn about other functions of Acme Inc? (ex. Formal training)
No, but it would be helpful to know maintenance acronyms and to be more familiar with the procedures they perform that we are a part of.

(T)How would you learn about another functional group in Acme Inc?
Get sent out on a maintenance trip to see what they were doing and ask questions.

(PT)How well do you coordinate and/or cooperate with other functional groups?
Well

(LI)Do you work toward any specific goals?

Learn the security regulations, make sure security is doing what they are suppose to do.

(L)When dealing with a situation in the Field who is the leader? Within your function and across functions.
Everyone is in charge, everyone needs to agree; if someone doesn't agree then the person who disagrees calls their commander and then it is worked out at the next level.

(L)How important are the decisions you are making?
Very important; Any mess-up can get you fired

(K)If someone left your group would the knowledge of the group be significantly reduced?
You would hate to see a super knowledgeable guy, but the knowledge as a whole wouldn't be reduced.

(K)Can you read on paper everything you need to know to perform your job?
99% can be, but you can't predict everything that will happen so sometimes you have to use your knowledge to solve a strange situation.

Attachment 19: WSC Controller #2 Interview

He has worked at WSC for under a year and I found out from WSC controller #3 that he is going to be fired soon.

(PT)How do you perceive your own group within the organization?
We are slighted when it comes to funding. It needs to be more evenly spread out. We don't have enough money to upgrade our equipment.

(PT)How do you perceive other groups?
- **Ops** – Always refer to regulations so it is easier to be on the same page
- **Maint** – depends on who you are working with
- **WCP** – They do notification; no real understanding – they just have the information

(PT)How much do you trust other groups?
- **Ops** - 5
- **Maint** - 4
- **WCP** – N/A

(PT)Does the level of trust vary by individual?
Yes

(T)Have you ever used informal communication, across functional lines, to come to a decision?
Not me, but maintenance has called a fire team direct to tell them where to go… that was out of line. There is definitely a gap in communication sometimes.

(LI)What is the mission of Acme Inc?
I saw it on a poster once

(LI)What is the vision of Acme Inc?
No

(LI)What do you (your work area) do to support the above questions?
Monitor Security

(T)Are members of your work area encouraged to learn about other functions of Acme Inc? (ex. Formal training)
No

(T)How would you learn about another functional group in Acme Inc?
Learning about all the aspects of security would be a good starting point in order to provide the best answer for all aspects of security.

(PT)How well do you coordinate and/or cooperate with other functional groups?
Well

(LI)Do you work toward any specific goals?
Understanding the security regulation.

(L)When dealing with a situation in the Field who is the leader? Within your function and across functions.
Situation dependent

(L)How important are the decisions you are making?
Very important

(L)How lenient are the criteria?
We need to keep track of everything, not lenient at all.

(K)If someone left your group would the knowledge of the group be significantly reduced?
Depends on the individual (at WSC)

(K)Can you read on paper everything you need to know to perform your job?
You can't predict every scenario, so a full understanding of the job will help you out when something hasn't been written down.

Attachment 20: WSC Controller # 3 Interview

Prior army experience, he has worked on the flight line for 6.5 years, FSC for 2 years and has been at WSC for 1.5 years.

(PT)How do you perceive your own group within the organization?
Lots of people in the group and about half don't want to be here. This is not a good 1st term airman base, but there are a lot of them. WSC is more selective than other squadrons.

(PT)How do you perceive other groups?
- **Ops** – Always suspicious of WSC, seems like they don't like having a lower ranking person telling them what to do.
- **Maint** – See the cops as a tool to help them.
- **WCP** – Probably could get rid of them

(PT)How much do you trust other groups?
- **Ops** - 4
- **Maint** – Only come to the cops when they want something 3.5
- **WCP** – N/A

(PT)Does the level of trust vary by individual?
Yes, I trust a few controllers in MMOC, but others not so much. It's hard to distinguish between individuals when you don't see them.

(T)Have you ever used informal communication, across functional lines, to come to a decision?
No, follow the chain

(LI)What is the mission of Acme Inc?
Removed for sensitivity purposes: see original document.

(LI)What is the vision of Acme Inc?
No idea what it is, these statements are not helpful, just a worthless thing.

(LI)What do you (your work area) do to support the above questions?
Ensure that the systems are not lost, stolen or damaged to the point of being unusable.

(T)Are members of your work area encouraged to learn about other functions of Acme Inc? (ex. Formal training)
Not encouraged, but I know more about maintenance just because I work with them.

(PT)How well do you coordinate and/or cooperate with other functional groups?
Pretty good coordination with MMOC, just average with the others

(LI)Do you work toward any specific goals?
We pretty much work by ourselves with the daily coordination with MMOC. [After more probing questions he did not reveal any specific goals.]

(L)When dealing with a situation in the Field who is the leader? Within your function and across functions.
If the decision comes down to security it is either the senior controller or the senior leader. In the field you do what capsule [operations] wants unless there is a reason not to.

(L)How important are the decisions you are making?
Very important, anything to do with this system is a big deal.

(L)How lenient are the criteria?
Regulations tell individuals what to do. Not a lot of stuff open for interpretation.

(K)If someone left your group would the knowledge of the group be significantly reduced?
Yes, if it is a highly knowledgeable individual, most people it doesn't matter when they leave.

(PT)If someone were to leave another function would your opinion of that function change?
MMOC, yes because they work real closely with WSC. Anyone else, no.

(K)Can you read on paper everything you need to know to perform your job?
No, there are definitely gray areas.

Attachment 21: FSC #1 Interview

He has worked in the field as a SRT member/leader for 2 years. 5 months ago started working as an FSC.

(PT)How do you perceive your own group within the organization?
Just here to support the mission

(PT)How do you perceive other groups?
- **Ops** – They are their own mission area
- **Maint** – They don't see the cops with much respect

(PT)How much do you trust other groups?
- **Ops** - 5
- **Maint** - 5

(LI)What is the mission of Acme Inc?
Doesn't know, but thinks that security always need to be combat capable

(LI)What is the vision of Acme Inc?
Doesn't know

(LI)What do you (your work area) do to support the above questions?
Fills different roles FSC, SRT leader and SRT member

(T)Are members of your work area encouraged to learn about other functions of Acme Inc? (ex. Formal training)
No, it is easy to be forgotten about…if you never asked to change jobs you could work the field forever.

(T)How would you learn about another functional group in Acme Inc?
Use to be easier when you could show the new security people the capsule; that way they at least knew operations a little better.

(PT)How well do you coordinate and/or cooperate with other functional groups?
Smoothly

(L)How important are the decisions you are making?
Situational, in 2 years in the field has seen one real security incident.

(K)If someone left your group would the knowledge of the group be significantly reduced?
Depends on the individual

(K)Can you read on paper everything you need to know to perform your job?

There is a checklist for everything.

Attachment 22: FSC #2 Interview
He has worked in as an FSC for 5.5 years

(PT)How do you perceive your own group within the organization?
There are lots of potential changes that need to be made. Fewer technical data changes, incentives to stay in the field, make it a controlled tour.

(PT)How do you perceive other groups?
- **Ops** – Work well with them sometimes, the checklists are run differently
- **Maint** – They have to get a job done, sometimes they think the FSC is not doing much

(PT)How much do you trust other groups?
- **Ops** - 4
- **Maint** – Not a lot of exchange

(LI)What is the mission of Acme Inc?
Knew it

(LI)What is the vision of Acme Inc?
Knew it

(LI)What do you (your work area) do to support the above questions?
Run Checklists and react to things

(T)Are members of your work area encouraged to learn about other functions of Acme Inc? (ex. Formal training)
No

(T)How would you learn about another functional group in Acme Inc?
Call down and talk with the capsule crew [operators]

(PT)How well do you coordinate and/or cooperate with other functional groups?
Very well, need to maintain a level head when dealing with other groups.

(LI)Do you work toward any specific goals?
Don't mess up

(L)When dealing with a situation in the Field who is the leader? Within your function and across functions.
Chain of command: Capsule [operator] is in charge and I will speak up if I disagree.

(L)How important are the decisions you are making?
Very

(L)How lenient are the criteria?

Everything is very black and white

(K)If someone left your group would the knowledge of the group be significantly reduced?
There is a good training regimen to replace those people that leave.

(PT)If someone were to leave another function would your opinion of that function change?
No

(K)Can you read on paper everything you need to know to perform your job?
For the most part, some things can be changed.

Attachment 23: Checklists and Interaction Tally

Checklist processing is usually initiated by a change in condition. There are many ways to initiate a checklist or a series of checklists; how they interact together and the extent to which they agree when multiple functions are interacting is less tangible. A study of the number of interactions per checklist will provide a baseline for how often interactions occur. What this part of the study will not do is provide the extent of those interactions or how critical they are. The average number of interactions based on this review is 3.1 times per checklist.