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# MEDIA USE AND PERFORMANCE IN AIR FORCE ORGANIZATIONS: TESTING THE VALUE OF MEDIA RICHNESS THEORY

by

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—Dale Harrison

## *Abstract*

Communication is a critical factor in any organization. The choices Air Force members make when communicating have a direct impact on mission accomplishment. Media Richness Theory (MRT) recognizes that communication needs, and the ability of various media to support them, are influenced by a number of factors involving the message content, situational elements, and its symbolic aspects. The theory predicts employees who use more appropriate communication media — face-to-face conversation, telephone, e-mail, and written correspondence — as predicted by the theory, will be more effective performers. The ability of MRT to explain supervisory performance ratings for a group of junior enlisted Air Force members (n=48) and another group of senior enlisted Air Force members (n=35) was tested. Results showed that junior enlisted members who made media choices more consistent with MRT were rated as more effective performers by their supervisors. This is consistent with the findings of previous studies. However, the results for senior enlisted members were not consistent with the theory. For senior enlisted members, agreement with their supervisor's media choices was a better predictor of performance than agreement with MRT's predictions. This suggests that MRT may be more applicable for some types of employees than others.

# Chapter I

# Introduction

## General Issue

Communication plays a key role in virtually every organizational activity and process. Communication is effective when the receiver understands the message as the sender intended. This is most likely to occur when it is timely, is detailed enough, and provides the opportunity for feedback if it is needed. The communication media selected to convey the message plays an important role in achieving effective communication because media have different characteristics and capacities.

Until recently, communication media choices were limited to face-to-face discussion or meetings, written correspondence or memos, and telephone calls. Today, however, organizations are faced with new media choices, such as electronic mail (e-mail), voice mail (v-mail), and facsimile transmission (fax). Managers in private industry and government organizations have moved quickly to incorporate these new and advanced communication technologies into the workplace (White, 1986). Because of its speed and efficiency, e-mail use has expanded rapidly — the number of e-mail messages that crossed networks doubled from 1993 to 1995 (Greengard, 1995: 161).

A key issue is the ability of MRT to provide a basis to understand communications requirements, and match those requirements to the capabilities of a given medium (Trevino et al., 1987). According to MRT, messages differ on their content (including complexity or emotional nature), situational factors (including time and location), and symbolic needs (conveying urgency or authority). MRT contends these three elements determine which media type is most effective in achieving a given communication objective.

MRT places media on a continuum based on their "richness." Richness is defined as the potential information-carrying capability of data (Daft and Lengel, 1984: 196). For instance, face-to-face conversation is the richest medium. The sender receives immediate feedback on how well the receiver is hearing and understanding the message. When the receiver's body language, facial expressions, or verbal cues indicate confusion or disinterest, the sender can change the approach, repeat or clarify the message, or ask for feedback. Written communication lies at the other end of the continuum and offers limited opportunity for feedback (Daft and Lengel, 1984: 198). As a result, the range of messages that can be adequately conveyed in writing is more limited than that of face-to-face conversation. Messages that are low in ambiguity (i.e., can be easily understood) can be communicated via leaner media such as written correspondence. On the other hand, messages high in ambiguity — because they are complex, personal in nature, or express emotions — require a richer media. In these cases, telephone calls or face-to-face conversations are more appropriate.

Air Force media needs vary widely among organizational units and levels. Overall, the Air Force tends to favor formal written communications for official messages (Adams,

1996: 3). This reduces the information load on decision-makers at the top of the organization by requiring lower echelon managers to review, filter out irrelevant information, consolidate, and verify potentially important information (Webster and Trevino, 1995). However, there are many purposes for which written correspondence is inappropriate. The Air Force also places great emphasis on symbols, tradition, and leadership, and this emphasis requires rich communications media to be effective. When the communication objective is to show authority, status, or position, or to convey personal interest or concern, static written documents or e-mail are less effective than personal, richer media.

Since managers spend up to 85% of their time communicating (Valacich et al., 1993: 1; Adams et al., 1993: 9), choosing less-effective media for those communication tasks is expected to be detrimental to performance. For example, although e-mail is convenient and widely available, it is not the best choice in all communication situations. Previous research has focused on the importance of effective communication for managers. Results suggest that managers who are more sensitive to the relationship between message equivocality and media characteristics are more likely to be rated as high performers (Daft et al., 1987).

However, MRT is based on communication theories that are expected to apply to employees in all types of organizational roles who also need to communicate. Therefore, it is important to examine the influence of MRT on non-managerial employees' performance, such as Air Force enlisted members. Finding that MRT is associated with performance of other employees would support the theory's usefulness in guiding media policies and training. While Adams (1996) found support for the hypothesis that MRT

factors would influence communication media choices in a military environment, the impact of the use of MRT on performance in the military has not been examined. This thesis examines the extent to which an Air Force member's choice of media for various communication tasks influences supervisor ratings of their performance. If media choice is not related to performance, then MRT's value to the Air Force is limited. However, if media choice is related to performance, then MRT should be examined more thoroughly, and potentially included in Air Force policy and training courses.

# Chapter 2

# Literature Review

## Media Richness Theory and Media Choices

Media Richness Theory is arguably the most prominent theory of communication media choice and usage today (Markus, 1994: 503). It was originally developed, using "traditional" media (i. e., face-to-face meetings, written correspondence, and telephone calls), to examine the relationship between the content of managerial communication and media selection (Daft et al. 1987: 355). Ultimately, the theory is concerned with determining the appropriate medium for dealing with uncertainty and equivocality (El-Shinnawy and Markus, 1997: 444).

Uncertainty is defined as the absence of information. It represents "the difference between the amount of information required to perform the task and the amount of information already possessed by the organization" (Galbraith, 1973). To reduce uncertainty, organizations gather information and analyze data, and managers typically ask questions and obtain answers. Organizations also reduce uncertainty by use of periodic reports, rules, procedures, and group meetings (Daft et al., 1987: 357).

Equivocality is defined as ambiguity, or the existence of multiple and conflicting interpretations of a situation (Daft and Lengel, 1986: 556). Equivocal situations are novel

and non-recurring, and equivocality typically manifests itself as confusion and disagreement. When equivocality is high, managers are unsure which questions to ask, and are forced to search beyond their current knowledge and establish a mutual understanding of the problem before a solution can be reached (Daft et al., 1987: 357). When the selected communication media has the capacity to provide the information necessary to resolve equivocality, more effective communication occurs (Webster and Trevino, 1995: 1568). When the media does not have adequate capacity, the receiver's information is incomplete and the communication is ineffective.

Media Richness Theory was originally proposed as a prescriptive theory. The assumption was that achieving a close match between communication requirements (uncertainty and equivocality) and media was essential for individual or organizational effectiveness (Markus, 1994:503). Markus (1994) achieved results that support this position. More recent studies treat MRT as descriptive and explanatory, attempting to explain how *individuals* actually *perceive and select* media rather than the implications of these choices on effectiveness. Thus, MRT has been used to explain senior managers reliance on face-to-face meetings or telephone calls for sensitive or important communications, and use of e-mail or written methods for routine communications (Markus, 1994: 504). Unfortunately, shifting emphasis away from effectiveness criteria to perceptual criteria misses the point. It does not provide any consistent standard for evaluating media or for measuring their value to the organization.

Trevino, Lengel, and Daft (1987) sought to determine the reasons managers chose a particular medium. They found three general reasons:

1. Ambiguity of the message *content* and richness of the communication medium

2. *Situational* determinants such as time and distance
3. ***Symbolic*** cues provided by the medium

**Content Reasons**

Content reasons involve equivocality and media richness. Media Richness Theory states effective managers will select different media based on the communication task situation and media "richness" (Markus, 1994:503). Media studied in the development of MRT were ranked based on their capacity to process equivocal information. The rankings were based on their ability to provide feedback, the availability of multiple cues to resolve confusion, language variety, and personal focus (Daft et al., 1987: 358). Face-to-face communication was ranked the richest since it allows rapid mutual feedback, which permits messages to be reinterpreted, clarified, and adjusted immediately. Additionally, face-to-face communications convey emotion and use nonverbal behavior to modify and control the exchange, which permits the simultaneous communication of multiple cues. Telephone conversation is considered less rich than face-to-face communication. Although it allows fast feedback, it does not provide body language and visual cues. The use of natural language and audio cues, combined with the personal nature of telephone communication make it second on the richness scale. Written communication, which is characterized by slow feedback, absence of voice cues, and limited visual cues, is the least rich (Daft et al., 1987: 359). These classifications were described before the widespread use of electronic mail. More recent studies place electronic mail between telephone and non-electronic written communication media on the richness scale (Markus, 1994: 505; Schmitz and Fulk, 1991: 488). The costs of using inappropriate media differ greatly. If rich media are used when lean media would suffice organizational resources may be wasted. On the other hand, if lean media is used when richer media are necessary,

miscommunication occurs and organizational performance may suffer. Figure 1 shows the media and their relative richness level

**Figure 1. Relative Levels of Richness**

**Situational Reasons**

Situational factors affect media choice as well. The appropriateness and availability of a medium is constrained or enhanced by contextual factors. Distance, expediency, structure, role expectations, and time pressure typically limit media choice. However, factors such as the availability of certain media (such as e-mail) are considered situational *enablers* (Trevino et. al., 1987: 559). If access to e-mail does not exist, that choice is obviously eliminated.

Other research identified two situational factors: geographic dispersion (distance) and job pressure (Steinfield and Fulk, 1986). Job pressure, although not specifically defined, includes factors such as time pressure and stress. Advances in communication technology have significantly reduced the importance of distance. For example, the availability of e-mail and teleconferencing eliminates the need for much face-to-face communication, saving time and money. Job and time pressures influence media choices as well. Steinfield and Fulk (1986) found managers were more likely to use the telephone

when acting under time pressure, despite the degree of equivocality present in the situation. The same study found managers separated by distance were more likely to use e-mail, regardless of the task equivocality. Finally, research has found that when situational constraints, such as distance or urgency, were pronounced, message content played a less important role in media selection (Trevino et al., 1987: 559).

**Symbolic Reasons**

The symbolic cues provided by the medium are also important in making media choices. Among them are the desire to show legitimacy, personal concern, or formality. For example, Feldman and March (1981) concluded that manager's communication behavior often represents "ritualistic responses" taken to appear competent, intelligent, legitimate, and rational. They suggest that some managers may request more data than actually needed or prepare professional-looking reports to show their decision was rational and legitimate. Similarly, the use of face-to-face communication can be used to symbolize caring or concern. This is shown in the military tradition of commanders advising squadron members in person of their selection for promotion. On the other hand, using e-mail to congratulate a subordinate for winning an award instead of doing so in person could convey a lack of concern (Trevino et al., 1987: 558). Formal written communication on the other hand, can be used by managers to symbolize authority over a specific matter. ."..The medium of communication may be selected for symbolic meaning that transcends the explicit message (Trevino et. al., 1987)."

Markus' (1994) study found members of an organization in a public risk management industry organization conformed to MRT's prescription in their media choices. She constructed 18 scenarios, six each for content, situational, and symbolic criteria. Using

50% as the criteria for agreement with the theory, Markus found managers agreed with MRT predictions in 15 of the 18 scenarios. It should be noted that Markus' criteria (50% agreement) is no better than random chance, and given the margin of error for her sample may be worse.

Adams (1996) also found high conformance with MRT for active duty Air Force members in the transportation functional area. She used 18 scenarios depicting Air Force communication situations — six each for content, situational, and symbolic criteria. Overall, 67% of the responses agreed with at least 50% of MRT predictions in 14 of 18 scenarios, indicating participants most often chose the media MRT would prescribe as most appropriate. It is worth noting the same weak criteria (50% agreement) was used.

As a preliminary step, Air Force members choices of communication media will be examined in this study.

1. Does MRT explain Air Force members' choices of communication media?
2. When scenarios are presented that involve content reasons, Air Force members will select communication media consistent with MRT predictions.
3. When scenarios are presented that involve situational reasons, Air Force members will select communication media consistent with MRT predictions.
4. When scenarios are presented that involve symbolic reasons, Air Force members will select communication media consistent with MRT predictions.

## Performance and Media Choices

A more important research question deals with the relationship of media richness to individual performance. Earlier, it was shown the literature suggests MRT conformance leads to more effective management (Markus, 1994) and higher performance ratings (Daft, et al, 1987). However, there have been no studies to determine if this is also true for subordinates (non-managers); i.e., does subordinate conformance to MRT lead to higher performance ratings. If, as the literature suggests, senior managers who choose media in

the way MRT predicts are considered higher performers, it is reasonable to expect lower-level (subordinate) employees would similarly be considered higher performers if they conform to MRT.

Other possible explanations for the higher performance ratings should be investigated. For example, simply agreeing with your supervisor's media choices may also affect performance ratings. If following MRT's prescriptions leads to higher performance, then it should explain variance performance ratings beyond what can be explained by agreement with their supervisor media choices. Although not the focus of this study, recent studies have found support for social influences, such as peers, *supervisors*, and organizational norms, in predicting media selection (Schmitz and Fulk, 1991; Webster and Trevino,1995). This study used agreement with supervisor media selection as a surrogate for social influence to determine if MRT explains performance ratings beyond agreement with their supervisor. The next research question and hypotheses examine the relationship between subordinate agreement with MRT and performance ratings provided by their supervisors.

1. For subordinate Air Force members, does agreement with supervisor or agreement with MRT best explain performance ratings?
2. The more an airman's media choices agree with his/her supervisor's choices, the higher his/her performance will be rated.
3. The more an airman's media choices agree with MRT predictions, the higher his/her performance will be rated.
4. The extent to which an airman's media choices agree with MRT will influence supervisory ratings above and beyond the extent to which his/her choices agree with his/her supervisor's media choices.
5. The more an NCO's media choices agree with his/her supervisor's choices, the higher his/her performance will be rated.
6. The more an NCO's media choices agree with MRT predictions, the higher his/her performance will be rated.

7 The extent to which an NCO's media choices agree with MRT will influence supervisory ratings above and beyond the extent to which his/her choices agree with

## Summary

For effective work to take place, researchers argue there needs to be a match between the task and communications technology (Adams, 1996: 16). All technologies are not equally suited for all tasks. To use technologies such as e-mail effectively and make predictions about their consequences, we need to better understand the factors that influence Air Force members' media choices. This study tests the hypothesis that media choices that are more consistent with MRT are associated with higher performance.

# Chapter 3

# Method

## Procedure

Like Markus (1994) and Adams (1996), this research used a field study to examine subjects' conformance with Media Richness Theory. The sample consisted of 844 Air Force members: 422 enlisted Air Force members in administrative-based career fields (such as Health Services Management, Information Management, and Personnel) and their supervisors. People in these jobs routinely carry out a wide variety of tasks that require them to choose between the four communication media, so effective use of media should affect their performance. Enlisted members in the appropriate career fields who were assigned to Second Air Force were asked to participate in the study and given approximately one month to complete the survey.

## Subjects

The 108 enlisted Air Force members were the focus of the study. They were 60% male and 40% female. Rank of the respondents was 58% airmen and 42% noncommissioned officers. About 4% of the respondents were assigned at numbered Air Force level, 16% were at wing/base level, 8% were assigned at group level, 60% were at squadron level, and 12% were assigned at some other organizational level. Fifteen percent

reported having less than one year of experience, 75% had 1-5 years of experience, and 10% had more than five years of experience with e-mail; three people reported no experience or access to e-mail.

## The Instrument

Two surveys (see Appendices A and B) were developed for this study, one for participants and another for their supervisors. The first part of both surveys was designed to gather demographic data about the participants to identify individual differences that might affect media choice.

The second section of the surveys asked participants to provide estimates on how their average daily e-mail use was distributed across various tasks. This data was obtained primarily to provide data for the sponsor (Second Air Force commander) and will be only briefly reported.

The third portion of the surveys asked participants to choose the medium they would select in scenarios highlighting one of the three categories (content, situational, and symbolic) described by Markus (1994). There were a total of 60 scenarios, 23 involving content reasons, 15 involving situational reasons, and 22 involving symbolic reasons. Some scenarios were written for this study, but most of them were taken directly from other studies or adapted slightly to make them more appropriate for Air Force members. For example, survey question #30, "What type of communication would you use if you want to provide squadron members details of a change to the enlisted promotion system?" is adapted from Lengel (1983). A table containing all the communication scenarios and their sources is provided in Appendix C. A panel of experts, consisting of six faculty

members and 34 graduate students in Air Force Institute of Technology Information Resource Management and Information Systems Management M.S. programs, reviewed the scenarios that were not adapted directly from those in existing literature. They agreed the scenarios represent typical Air Force communication scenarios. This process resulted in 60 communication task scenarios for which respondents were asked to choose the most appropriate media for the task from the following choices: face-to-face conversation, telephone, e- mail, and written correspondence. One of the scenarios was discarded during data analysis because the Air Force has a program that directs use of a specific media in that situation. This section included questions used to test hypothesis one.

The fourth section of the surveys was designed to obtain individual perceptions of the impact of e-mail on effectiveness and performance, as well as to gauge supervisory attitudes regarding e-mail usage. For each question, respondents were asked to rate their level of agreement using a 7-item Likert scale ranging from "Strongly Disagree" to "Strongly Agree." This data was obtained primarily to provide data for the sponsor regarding prevailing attitudes and perceptions about e-mail usage. These will be briefly reported herein.

The fifth section, contained only in the supervisory survey (Appendix B), was used to obtain supervisor-reported performance ratings. There were eight questions. The first four asked the supervisor to rate the effectiveness of the subordinate's use of different communication media (e-mail, written correspondence, face-to-face conversation, and telephone). The fifth question asked the supervisor to rate the effectiveness of the subordinate's use of communication media in general. The sixth question asked the supervisor to rate subordinate effectiveness in the performance of job-related tasks, while

the seventh question asked the supervisor to rate the subordinate's contribution to the unit. The last question asked the supervisor to rate the subordinate's overall performance. The eight performance items used a 7-point Likert scale ranging from "Very Much Less Effective Than Peers" to "Very Much More Effective Than Peers." This section included questions that were used to test hypothesis two.

## Procedures

The sample was obtained from the Headquarters Air Force (HAF) files, and consisted of enlisted members (n=422) assigned to organizations within Second Air Force. Military personnel were targeted as supervisors, however some of the supervisory surveys were completed by civilian employees. Surveys were mailed to supervisors, who were asked to complete their own survey and pass the other survey to the named subordinate. Each survey was accompanied by its own cover letter, bubble sheet, and pre-addressed return envelope to provide individual privacy.

Of the total 844 surveys sent out, 25 were returned as undeliverable, for an effective distribution of 819 surveys. From these 819 surveys, 246 responses were received, yielding a net response rate of 30% which is acceptable for mail in-surveys (Cooper and Emory, 1995: 282). A total of 241were valid responses. For subordinate surveys, the response rate was 26.4% (108/409). For supervisor surveys, the response rate was 32.4% (133/410). Subordinate and supervisor surveys were numbered so that subordinate and supervisory responses could be matched up. This was crucial because the supervisory ratings would be meaningless unless they could be matched to a specific subordinate

survey response. There were 83 matched responses — where the surveys of the subordinate *and their* supervisor were both received.

## Raters

Performance ratings were provided by the participant's supervisors, The survey cover letter to supervisors stressed the need for ratings to be completed by the person that monitors the ratee's performance on a daily basis. This was either the reporting official (person that prepared the ratee's enlisted performance report) or another person who was well qualified to rate the individual's performance. Respondents were 67% male and 33% female. Over 92% of the raters had more than six years of service. A typical rater was a Technical Sergeant (E-6) or Master Sergeant (E-7), but raters ranged in grade from Staff Sergeant (E-5) to Lieutenant Colonel (O-5), and included 13 civilian employees.

## Measures

Supervisors rated subordinate performance for the eight items in section five of the supervisor's survey (Appendix B). An overall performance measure (PERF) was created by adding scores for the three items addressing overall job performance (#91-93 on the survey instrument). The alpha for the overall performance measure was .83 (n=83). A media performance variable (MEDIA) was created by adding scores for the four items addressing media performance (#86-89 on the survey instrument). The alpha for the media performance variable was .87 (n=83). Two other variables were also created, WMRT (individual conformance with MRT media selections) and WSUP (individual conformance with supervisory media selections). These factors represented the percentage of the 59 scenarios where a subordinate respondent selected the

communication media that matched either the theory's (WMRT) or their supervisor's (WSUP) media choices.

## Analysis

Results addressing research question one were calculated as the percentage of respondents who chose the media most appropriate for the given scenario, as predicted by MRT. The percentage of agreement with the theory was calculated for content reasons, symbolic reasons, and situational reasons. Finally, the percentage of each participant's responses that agreed with MRT was calculated as the index of overall agreement.

To more closely mirror previous studies where managerial performance was examined, the subordinates were separated into two groups based on their career status. The junior subordinate group included first-term enlistees ranking from Airman Basic (E-1) through Senior Airman (E-4). The senior subordinate group consisted of people ranking from Staff Sergeant (E-5) to Chief Master Sergeant (E- 9). This group was similar to samples typically used in studies of MRT. Supervisory status and other managerial tasks are reserved exclusively for Staff Sergeants and above. Correlations between the performance factor (PERF), the two conformance factors (WMRT and WSUP), and other factors were computed. Fisher's $z'$ transformation was used to determine if the correlations between WMRT, WSUP, and PERF, were significantly different for the two groups (junior and senior subordinates) (Cohen and Cohen, 1983). Hierarchical regression (Cohen and Cohen, 1983) was used to examine whether agreement with MRT explained variance in performance above and beyond what is explained by making the same media choices as the supervisor. If agreement with MRT's prescriptions

explained incremental variance above what is explained by agreement with supervisor media choices, there would be strong evidence that MRT influences performance. Using overall performance (PERF) as the dependent variable, this regression shows what portion of variance is explained by one independent variable (agreement with supervisor; WSUP) and compares that to the variance explained when the second independent variable (agreement with MRT; WMRT) is added. Similar analysis was conducted for media performance (MEDIA).

# Chapter 4

# Results

## E-Mail Use

E-mail use for subordinates was typically less than one hour per day, as opposed to between one and two hours per day for supervisors. For subordinates, daily time using e-mail tended to increase with rank. This is probably due to additional responsibilities and greater supervisor expectations, which may create an environment where supervisors select the media that allows rapid task completion. Supervisor's daily e-mail use also increased with rank. Supervisors differ from subordinates, however, where much smaller numbers reported they did not use e-mail on a daily basis. Average daily e-mail use for subordinates and supervisors is reported in Table 1.

**Table 1. Average Daily E-Mail Use (Percentage of Respondents by Category)**

| | Not Used on Daily Basis | Less Than 1 Hour | More Than 1 But Less Than 2 Hours | More Than 2 Hours |
|---|---|---|---|---|
| Subordinates (n=108) | 16 | 44 | 26 | 14 |
| Supervisors (n=133) | 8 | 35 | 38 | 19 |

## Research Results

The first objective was to find out if MRT explains Air Force members' choices of communication media. The scenarios contained in the survey were associated with one of the content, symbolic, and situational reasons Markus cited for choosing certain media. The following table lists percentages of how often respondent's choices matched MRT predictions. By looking at what MRT lists as the most appropriate media for each scenario, percentages of agreement with MRT were calculated in each of the three reason categories (see Tables 2 and 3).

**Table 2 Percent Agreement With Media Richness Theory (n=241)**

| REASONS (associated survey question) | MRT predict | Agree w/MRT | | Media | Choice | |
|---|---|---|---|---|---|---|
| CONTENT REASONS | | | Face | Phone | E-mail | Written |
| To convey, confidential, private, or delicate information (Q68, 69, 71, 80) | Face or Phone | 92.9% | 64.8% | 28.1% | 5.1% | 2.0% |
| To describe a complicated situation or proposal (Q58) | Face or Phone | 49.4 | 2.1 | 47.3 | 27.2 | 23.4 |
| To influence, persuade, or sell an idea (Q45, 73) | Face or Phone | 81.6 | 77.8 | 3.8 | 11.7 | 6.7 |
| To express feelings or emotions | Face or | 78.7 | 45. | 33.7 | 15.1 | 6.3 |

| | | | | | | |
|---|---|---|---|---|---|---|
| (Q67, 76) | Phone | | 0 | | | |
| To keep someone informed (Q24, 25, 32, 36, 42, 46, 56, 62, 65) | E-mail or Written | 65.1 | 29.8 | 5.0 | 46.9 | 18.2 |
| To follow-up earlier communication (Q23, 27, 44, 47, 54) | E-mail or Written | 52.6 | 40.8 | 6.5 | 43.6 | 9.0 |
| SITUATIONAL REASONS | | | Face | Phone | E-mail | Written |
| To respond to a straightforward telephone message (Q38) | Phone or E-mail | 89.5% | 8.4% | 45.2% | 44.8% | 2.1% |
| To respond to a complicated e-mail message (Q22) | Phone or E-mail | 47.1 | 30.3 | 17.2 | 29.8 | 22.7 |
| To communicate something of little importance to someone close by (Q41, 50, 72) | Face | 63.7 | 63.7 | 13.7 | 19.1 | 3.5 |
| To communicate something complicated to someone far away (Q28) | Phone | 52.3 | 6.3 | 52.3 | 23.8 | 17.6 |
| To communicate the same thing to many people (Q26, 30, 34, 37, 40, 48, 52, 59, 75) | E-mail or Written | 75.4 | 8.9 | 15.6 | 60.8 | 14.7 |

| SYMBOLIC REASONS | | | Face | Phone | E-mail | Written |
|---|---|---|---|---|---|---|
| When you want to be casual, informal (Q29, 31) | Face | 41.1% | 41.1% | 36.5% | 21.8% | 0.6% |
| When you want to convey urgency (Q33, 35, 49, 61, 74, 79) | Face or Phone | 73.3 | 63.4 | 9.8 | 15.2 | 11.6 |
| When you want to convey personal concern or interest (Q39, 53, 55, 60, 63, 66) | Face or Phone | 80.7 | 55.4 | 25.3 | 16.4 | 2.9 |
| When you want to obtain an immediate response, action (Q51, 57, 70, 77, 78, 81) | Face or Phone | 90.2 | 84.3 | 5.9 | 8.8 | 1.0 |
| When you want to show that your communication is official (Q43, 64) | E-mail or Written | 88.9 | 2.3 | 8.8 | 20.7 | 68.2 |

**Table 3. Overall Agreement Percentages (n=241)**

| | |
|---|---|
| Average agreement for Content reasons | 68.6% |
| Average agreement for Situational reasons | 70.6% |
| Average agreement for Symbolic reasons | 78.4% |
| Overall agreement | 72.8% |

Across all responses, Air Force members' media choices conformed with MRT 73% of the time. Their agreement was somewhat higher for symbolic reasons and lower for content reasons. When situational factors such as time, location, or number of recipients were part of the scenario, members chose the media that conformed with the theory 71% of the time. When content-related factors such as informing others, conveying private or delicate information, or expressing feeling or emotions were involved, they conformed with the theory 69% of the time. Their responses agreed more (78%) for scenarios involving symbolic factors such as conveying authority, urgency, or personal concern or interest. Adams (1996) found that Air Force managers had an overall agreement percentage of 67%. Using the same yardstick as Markus' 1994 study (50%), Air Force members failed to agree with the theory on only 3 of the 16 items, 1 each in the content, situational, and symbolic categories. Overall, Air Force members made media choices that

agreed with what MRT would predict. These results indicate MRT is useful in predicting Air Force member's media choices.

The second objective was to determine if subordinates who more closely followed

MRT's prescriptions also had higher supervisory performance ratings. Correlations for the two groups are provided in Tables 4 and 5.

**Table 4. Correlations (Junior Enlisted; n=48)**

| | WMRT | WSUP | PERF | #3 | #9 | #11 |
|---|---|---|---|---|---|---|
| Agree with MRT (WMRT) | 1.000 | | | | | |
| Agree with Supervisor (WSUP) | .673** | 1.000 | | | | |
| Overall Performance (PERF) | .393** | .253* | 1.000 | | | |
| Time in Service (#3) | .132 | .345** | .195 | 1.000 | | |
| E-Mail Experience (#9) | .098 | .062 | .160 | .457** | 1.000 | |
| Avg Daily E-Mail Use (#11) | .003 | -.132 | .028 | .200 | .100 | 1.000 |

** Correlation is significant at the 0.01 level (1-tailed).
Correlation is significant at the 0.05 level (1-tailed).

**Table 5. Correlations (Senior Enlisted; n=35)**

| | WMRT | WSUP | PERF | #3 | #9 | #11 |
|---|---|---|---|---|---|---|
| Agree with MRT (WMRT) | 1.000 | | | | | |
| Agree with Supervisor (WSUP) | .233 | 1.000 | | | | |
| Overall Performance (PERF) | -.239 | .108 | 1.000 | | | |
| Time in Service (#3) | Note 1 | Note 1 | Note 1 | 1.000 | | |
| E-Mail Experience (#9) | -.041 | .277 | .168 | Note 1 | 1.000 | |
| Avg Daily E-Mail Use (#11) | -.290* | .548** | .321* | Note 1 | .032 | 1.000 |

** Correlation is significant at the 0.01 level (1-tailed).

* Correlation is significant at the 0.05 level (1-tailed).

Note 1: Correlations could not be computed because all individuals were the same grade.

For hypothesis 2a, the correlation (r=.253) for junior enlisted members between performance (PERF) and agreement with supervisor on media selection (WSUP) was

significant (p=.05). This suggests that for junior enlisted members, agreement with supervisor does positively influence supervisory performance ratings.

For hypothesis 2b, the correlation (r=.393) for junior enlisted members between performance (PERF) and agreement with MRT on media selection (WMRT) was significant (p=.01). This suggests that for junior enlisted members, agreement with MRT does positively influence supervisory performance ratings.

Hypothesis 2d, "The more an NCO's media choices agree with his/her supervisor's choices, the higher his/her performance will be rated," was *not* supported. The correlation (r=.108) for senior enlisted members between performance (PERF) and agreement with supervisor in media selection (WSUP) was not significant. This suggests that for senior enlisted members, agreement with supervisor does not significantly influence supervisory performance ratings.

Hypothesis 2e, "The more an NCO's media choices agree with MRT predictions, the higher his/her performance will be rated," was *not* supported. The correlation (r=-.239) for senior enlisted members between performance (PERF) and agreement with MRT in media selection (WMRT) was not significant. Thus MRT did not significantly influence their supervisory performance ratings.

Part of the second objective was to determine if MRT explained performance above and beyond agreement with supervisor media choices. The results of hierarchical regressions for the two groups are shown in Tables 6 and 7.

**Table 6. Hierarchical Regressions (Junior Enlisted; n=48)**

| Table 6. DEPENDENT VARIABLE | STEP DELTA 1 $R^2$ | STEP DELTA 2 $R^2$ | TOTAL MODEL $R^2$ |
|---|---|---|---|
| PERF (n=48) | WMRT .131 WSUP .058* | WSUP .000 WMRT .073* | .131 .131 |
| MEDIA (n=35) | WMRT .070* WSUP .038 | WSUP .000 WMRT .032 | .070 .070 |

** p<.05

* p<.10

Note: PERF is overall performance
MEDIA is media performance
WMRT is agreement with MRT
WSUP is agreement with supervisor

**Table 7. Hierarchical Regressions (Senior Enlisted; n=35)**

| DEPENDENT VARIABLE | STEP DELTA 1 $R^2$ | STEP DELTA 2 $R^2$ | TOTAL MODEL $R^2$ |
|---|---|---|---|

| | | | |
|---|---|---|---|
| PERF (n=48) | WMRT .057<br>WSUP .006 | WSUP .018<br>WMRT .069 | .075<br>.075 |
| MEDIA (n=35) | WMRT .033<br>WSUP .020 | WSUP .022<br>WMRT .035 | .056<br>.056 |

** p<.05
* p<.10
Note: PERF is overall performance
MEDIA is media performance
WMRT is agreement with MRT
WSUP is agreement with supervisor

Hypothesis 2c, "The extent to which an airman's media choices agree with MRT will influence supervisory ratings above and beyond the extent to which his/her choices agree with his/her supervisor's media choices," was partially supported. For media performance (MEDIA), agreement with MRT (WMRT) did not significantly explain variance beyond agreement with supervisor (WSUP). However, for overall performance (PERF), WMRT did significantly explain variance beyond WSUP (p<.10; used due to the small sample size). This is shown more clearly when WMRT is entered first and then WSUP is added; WSUP did not explain any variation not already explained by WMRT. This was true for both PERF and MEDIA.

Finally, for hypothesis 2f, "The extent to which an NCO's media choices agree with MRT will influence supervisory ratings above and beyond the extent to which his/her

choices agree with his/her supervisor's media choices," was *not* supported. For media performance (MEDIA), agreement with MRT (WMRT) did not significantly explain variance beyond agreement with supervisor (WSUP). In fact, neither WMRT or WSUP explained a significant portion of the overall variation. The results for overall performance (PERF) were very similar to those for MEDIA. Neither WMRT or WSUP explained a significant portion of the overall variation.

The following table summarizes the results of this study.

**Table 8. Hypotheses Results**

| | STATED HYPOTHESIS | RESULTS |
|---|---|---|
| H1a | When scenarios are presented that involve content reasons, Air Force members will select communication media consistent | Supported |
| H1b | When scenarios are presented that involve situational reasons, Air Force members will select communication media | Supported |
| H1c | When scenarios are presented that involve symbolic reasons, Air Force members will select communication media consistent | Supported |
| H2a | The more an airman's media choices agree with his/her supervisor's media choices, the higher his/her performance will | Supported |
| H2b | The more an airman's media choices agree with MRT predictions, the higher his/her performance will be rated. | Supported |
| H2c | The extent to which an airman's media choices agree with MRT will influence supervisory ratings above and beyond the extent to which his/her choices agree with his/her supervisor's | Partially Supported |
| H2d | The more an NCO's media choices agree with his/her supervisor's media choices, the higher his/her performance will | Not Supported |
| H2e | The more an NCO's media choices agree with MRT predictions, the higher his/her performance will be rated. | Not Supported |

| | | |
|---|---|---|
| H 2f | The extent to which an NCO's media choices agree with MRT will influence supervisory ratings above and beyond the extent to which his/her choices agree with his/her supervisor's | Not Supported |

# Chapter 5

# Discussion and Conclusions

## Discussion

The Air Force Agreement with , MRT, and Performance. Contrary to expectations and previous study results, MRT does not seem to be associated with performance. This is a major departure from previous studies which have linked agreement with MRT to higher performance. As expected, Air Force members' choices of communication media can be explained by MRT, and Markus' scale (as modified) seems to be an effective tool for predicting media choice behavior. Air Force members conformed highly with MRT based on the scale.

The findings led to further examination to determine if agreement with the theory (WMRT) or supervisor expectations (WSUP) affected the two groups similarly. First, the role of agreement with supervisor media choices (WSUP) was considered. The correlations between WSUP and performance (PERF) for each group (r=.253 for junior and r=.108 for senior) were not significantly different (p≈.258). This suggests that conformance with supervisory expectations is important for all subordinates. Next, the role of MRT (WMRT) was examined. The correlations between WMRT and performance (PERF) for the two groups (r=.393 for junior and r=-.239 for senior) were compared and

found to be significantly different (p≈.002). Junior enlisted members received higher performance ratings when they agreed with MRT expectations in media selection. However, for senior enlisted members following MRT prescriptions was not related to performance. The correlation (r=-.239) suggests that conforming with the theory will ***adversely*** affect performance ratings, a significant departure from findings in previous studies.

Another interesting finding in the correlations was the relationship between average daily e-mail use and performance. The correlation between performance (PERF) and average daily e-mail use (survey question #11) for senior enlisted members (r=.321, significant at the p<.05 level), suggests senior subordinates who use e-mail more are rated higher performers. Although there was no significant difference between the correlations of senior and junior enlisted members (p≈.095), the relationship between increased e-mail use and performance was much less pronounced for junior enlisted members (r=.028). Apparently, using e-mail is considered desirable, and to a greater extent for senior enlisted members than junior enlisted members. The desirability of e-mail use is possibly due to its ability to reach large numbers of people at numerous locations quickly so other tasks may be engaged.

Hierarchical regression results suggest that for junior subordinates, employee agreement with MRT predictions explains total variance which agreement with supervisor media choices does not. When predicting performance for these employees, data on agreement with supervisor media choices need not be considered. For senior subordinates, neither agreement with MRT predictions or supervisor media choices

explained a significant amount of variation. This suggests other factors not considered in this study, and a more effective model, exist.

Closer examination of the results using Markus' scale (Table 1) reveals that when media selection did not agree with MRT predictions, a single medium — e-mail — was the incorrect choice most often (9 of 10 cases). This is most likely due to the ease of use and speed associated with using e-mail, particularly in situations where there is no directed media choice. This preference for e-mail and its relationship to performance is worthy of further investigation.

In some cases, incorrect media choice was more likely to affect communication effectiveness than in other cases. For example, in scenarios designed "To describe a complicated situation or proposal" Air Force members chose e-mail over 27% of the time; MRT suggests face-to-face meetings or phone are the correct media choices. Using media (e-mail) without sufficient capacity may impede normal decision-making and detract from organizational performance. In other cases, incorrect choices did not hinder communication. For example, Air Force members chose face-to-face meetings nearly 30% of the time for scenarios designed "To keep someone informed," which MRT suggests is best suited for e-mail or written media. Face-to-face meetings is richer than either e-mail or written communications, so communication effectiveness was not a problem, although waste (in the form of organizational resources such as time and employee salaries) might occur.

Table 1 shows that while some percentages were lower than the rest within each category (content reasons, situational reasons, symbolic reasons), only one is notably different from the others. In the symbolic reasons category, Air Force members most

frequently chose face-to-face meetings or phone "When you want to be casual, informal." MRT suggests face-to-face media is appropriate for this type of scenario. While most Air Force members chose what MRT says is the appropriate media (41% chose face-to-face), nearly 60% selected other media (phone and e-mail). Adams encountered a similar, but more pronounced result — 79% of respondents chose the phone — which was attributed to wearing a uniform with rank prominently displayed, making casualness or informality difficult (Adams, 1996: 29). The scenarios used in this study involved the individual telling a co-worker which portion of an Air Force Instruction contains needed information and telling a friend which form to use to take leave. Presence of a military uniform should not be a factor with friends or co-workers. However, it is possible that respondents did not perceive these as casual or informal situations or that other factors such as physical proximity or time resulted in a decrease in reliance on face-to-face communication. Another explanation for the selection of e-mail is the ability to complete simple tasks quickly and move on to others, without the side discussions and delays that typically occur when talking face-to-face with someone.

There were some items for which a large percentage of members chose media that did not agree with MRT predictions. For example, in the content reasons category, over 50% of Air Force members chose e-mail or written correspondence "To describe a complicated situation or proposal" when MRT suggests face-to-face or phone. This is difficult to explain, and suggests the scenario may have been poorly constructed. Also, nearly 30% of respondents chose face-to-face media "To keep someone informed" when MRT suggests e-mail or written correspondence. This case may well reflect an organizational tendency to depend on meetings, a face-to-face forum, to keep people informed. Again in the

content reasons category, over 40% of Air Force members chose face-to-face media "To follow-up earlier communication" when MRT suggests e-mail or written. Here, the media used for the "earlier communication" may guide media selection for the response; i. e., an initial communication by e-mail would likely receive an e-mail response.

In the situational reasons category, over 30% of Air Force members chose face-to-face media "To respond to a complicated e-mail message" when MRT suggests phone or e-mail. The scenario presented was, "You're responding to a long e-mail describing complicated issues you've been asked to take care of." It is possible that respondents mistakenly thought the intent of the scenario was to respond to the supervisor or other person that asked them to complete the task as opposed to the originator of the e-mail. Finally, 24% of Air Force members chose e-mail "To communicate something complicated to someone far away" when MRT suggests phone is the proper medium. The theory apparently considers the complicated matters as priority to the proximity issue. The scenario provided was "You want to tell a counterpart at another MAJCOM (major command) how to do a complicated aspect of your job." Evidently, many Air Force members thought distance was a more important element in the scenario than the "complicated aspects." Adams found that Air Force members rank e-mail as rich as phone communications (Adams, 1996: 29). Adams finding may also be a factor in this scenario.

Removing the scenarios that appear to have been poorly constructed results in modest increases in agreement with the theory. Overall agreement with the theory increases from 72.8% to 75.2%. For content reasons alone, agreement increases from 68.6% to 69.5%; for situational reasons, agreement rises from 70.6% to 73.8%; and for symbolic reasons, agreement increases from 78.4% to 82.2%. This is a departure from Adams' study, in

which where removal of poorly constructed scenarios resulted in much larger increases in agreement with MRT (Adams, 1996: 30).

## Conclusions

MRT's failure to further explain supervisory performance ratings casts serious doubt about its overall value. Future studies should attempt to determine which additional factor(s) are needed to increase the theory's utility. Perhaps, however, MRT does influence other overarching indicators which organizations value. Further research may be able to determine what these indicators are, or if they even exist.

Another good place to focus future research is Markus' scale. Some of the scale items do not logically "fit." For example, a communication scenario that involves both a large number of people and distance does not fit well into any single slot on Markus' scale. The scale also suggests that communication events are one-dimensional. Communication incidents may not be unidimensional. Factors representing content, situational, and symbolic reasons may all exist simultaneously, and the scale does not perform as well in those instances. For instance, when scenarios involve both content (a complicated situation) and symbolic (conveying urgency) reasons, the scale provides no resolution, leaving media selection to individual choice or chance.

### Implications for the Air Force

Factors such as message ambiguity, the time and place of a message, number or recipients, and the need to convey urgency influence the medium chosen to deliver the message — content reasons, situational reasons, and symbolic reasons all appear to influence Air Force members' media choices. However, these choices seem to have little

impact on individual and organizational performance. As the Air Force organization evolves and new communication media become increasingly pervasive, the impact of media choices needs to be understood to permit a better understanding of whether or not these new media are being used effectively, and how to harness them to improve performance. Apparently, Media Richness Theory is not the answer.

## Appendix A

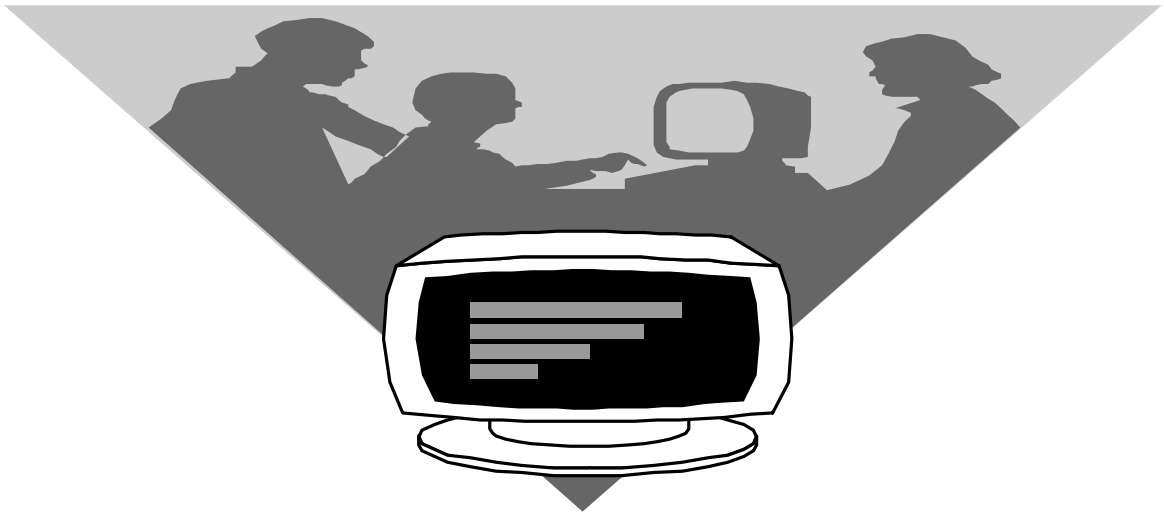
## Communications Media Survey (Subordinate)

USAF Survey Control # 97-30

Expiration Date: 31 Dec 97

# 2 AF/CC-SPONSORED

# ELECTRONIC COMMUNICATIONS MEDIA USAGE SURVEY



Capt Dale Harrison

AFIT/LAL

Wright-Patterson AFB OH

# SURVEY ON COMMUNICATIONS MEDIA

This 2 AF/CC-sponsored survey is designed to gather important information on how use of communications media contributes to mission accomplishment and effective individual performance in the Air Force.

PART I

Please provide some background information by filling in

the appropriate answer on the bubble sheet provided**.**

**1. What is your sex?**

(1) Male

(2) Female

**2. What is your rank?**

(1) AB to Amn

(2) A1C

(3) SrA or Sgt

(4) SSgt

(5) TSgt

(6) MSgt

(7) SMSgt to CMSgt

**3. How long have you been in the Air Force?**

(1) 1 year or less

(2) More than 1 but less than 2 years

(3) More than 2 but less than 3 years

(4) More than 3 but less than 4 years

(5) More than 4 but less than 5 years

(6) More than 5 but less than 6 years

(7) At least 6 years

**4. What is your current Air Force Specialty Code (AFSC)?**

(1) 3A0X1, Information Management

(2) 3S0X1, Personnel

(3) 3S2X1, Education and Training

(4) 4A0X1, Health Services Management

(5) Other _____ (fill in 5 on bubble sheet)

**5. How long have you been in your current AFSC?**

(1) Less than 1 year

(2) At least 1 year, but less than 4 years

(3) At least 4 years, but less than 10 years

(4) At least 10 years

***Please turn the page to continue…***

**6. How long have you been at your current job?**

(1) Less than 6 months

(2) At least 6 months but less than 1 year

(3) At least 1 year, but less than 3 years

(4) At least 3 years

**7. At what command level do you work?**

(1) Numbered AF

(2) Wing/Base

(3) Group

(4) Squadron

(5) Other _____ (fill in 5 on bubble sheet)

**8. What is your education level?**

(1) High School or GED

(2) Some college but no degree

(3) 2 year degree (AA or AS)

(4) 4 year degree (BA or BS)

(5) MA or MS degree

(6) PhD

**9. When did you first use electronic mail?**

(1) 1997

(2) 1996

(3) 1995

(4) 1994

(5) 1993

(6) 1992

(7) 1991 or earlier

**10. How often do you use e-mail?**

(1) Do not use e-mail

(2) At least once a month

(3) At least once a week

(4) At least once a day

(5) Many times each day

**11. In your present position, approximately how many hours per day do you use e-mail?**

(1) Do not use e-mail on a daily basis

(2) Less than 1 hour

(3) More than 1 but less than 2 hours

(4) More than 2 but less than 3 hours

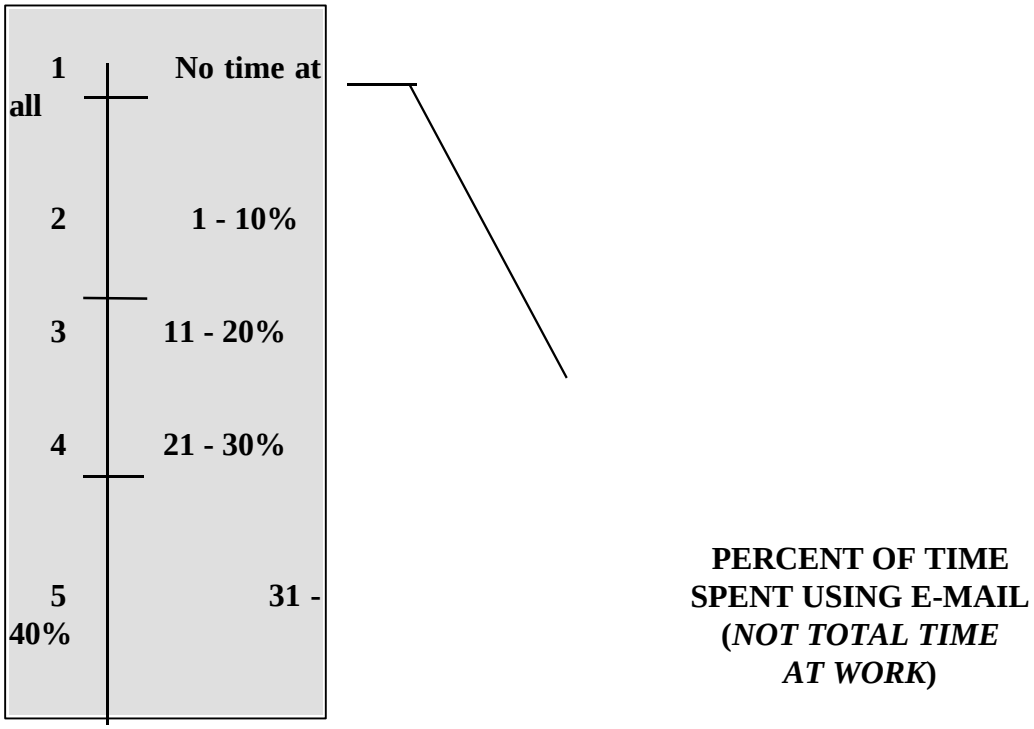
(5) More than 3 but less than 4 hours

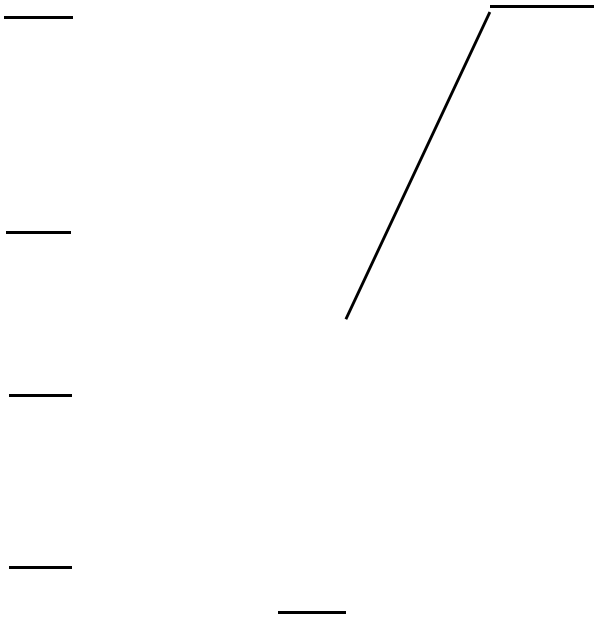
(6) More than 4 hours

***Please turn the page to continue…***

Part II

Air Force people are permitted to use e-mail for personal and official communications. Of your total e-mail usage, please estimate what portion, on average, is used for the tasks listed below. Use the scale provided to record your answers on the bubble sheet.





**Of the time you use e-mail at work, what percentage of the time, on average, is …**

12. Using e-mail to answer a suspense. ____
13. Using e-mail for formal unit communications. ____
14. Using e-mail for informal unit communications. ____
15. Using e-mail to keep in touch with friends in the Air Force. ____
16. Using e-mail to keep in touch with friends outside the Air Force. ____
17. Using e-mail to share information with professional contacts in your AFSC. ____
18. Using e-mail to conduct personal business. ____
19. Using e-mail to answer a customer's request for information. ____
20. Using e-mail to request information related to your job. ____
21. Using e-mail for other job requirements. ____

**The total percentage for all responses should equal about 100%.**

***Please turn the page to continue…***

Part III

Please choose the communication method that you would be most likely to use if you were in the situations described below. Then fill in the appropriate answer on your bubble sheet. Assume that all 4 types of communication described below are available.

## Communication Methods

1. Face to face conversation
2. Telephone
3. E-mail
4. Written communications (letter, memo, or message)

What type of communication would you choose if

22. You're responding to a long e-mail describing complicated issues you've been asked to take care of.

23. You want to tell your supervisor you found the answer to a question she had.

24. You are sending out instructions for completing a new recurring weekly suspense.

25. You are sending peers at other bases instructions on how to complete a new Air Force form.

26. You want to tell the whole squadron there will be a mass weigh-in coming up.

27. You want to remind committee members of the date, time, and location of an upcoming meeting.

28. You want to tell a counterpart at another MAJCOM how to do a complicated aspect of your job.

29. You want to tell a co-worker which section of an AFI has the information he's looking for.

30. You want to provide squadron members details of a change to the enlisted promotion system.

31. You want to tell a friend which form to use to request leave.

32. You want to pass on some good-to-know information to a co-worker.

33. Your boss has asked you to get a document to the group commander as soon as possible.

34. You want to tell the whole squadron about a severe weather warning or watch.

35. You want to tell a subordinate he must be in place for an overseas 120 day TDY in 4 days.

36. You want to update your boss on the status of a long-term project.

37. You want to tell committee members the wing commander requested a no-notice meeting tomorrow.

38. You want to tell a counterpart in another squadron how to do a routine aspect of your job.

39. You want to tell a friend which AF Instruction has the answer to a question her commander asked.

40. You want to tell squadron members about changes to the enlisted promotion system that will affect testing cycles in the next fiscal year.

41. You want to tell a new co-worker the squadron procedure for requesting leave.

***Please turn the page to continue…***

## Communication Methods

1. Face to face conversation
2. Telephone
3. E-mail
4. Written communications (letter, memo, or message)

What type of communication would you choose if

42. You want to pass on some good-to-know information to your boss.

43. You are sending a required report on how your squadron met some quality initiatives.

44. You are responding to your boss' request for an update on the status of a long-term project.

45. You want to submit an idea that could save the Air Force thousands of dollars.

46. You want to give notes to subordinates who were unable to attend a meeting.

47. You are responding to your commander's request for information on an additional duty you are responsible for.

48. You want to pass on some good-to-know information to several co-workers.

49. Your boss has asked you to ensure all squadron commanders receive a document ASAP.

50. You want to tell a co-worker the details of a change to the enlisted assignment system.

51. You want to remind your subordinate of an appointment.

52. You want to remind co-workers of a staff meeting tomorrow.

53. You want to find out the status of work you assigned to a subordinate.

54. You want to give a subordinate additional instructions to complete a task.

55. You need to tell a subordinate that his father died.

56. You want to furnish routine information to a higher headquarters office on your base.

57. You want to ask a subordinate why he did not complete a task properly.

58. You want clarification on a policy from a higher headquarters on your base.

59. You want to pass on detailed instructions to people at three different locations on base.

60. You want to tell someone about a potential hazard.

61. You want to tell a subordinate to see the commander right away.

62. You want to inform your supervisor of “lessons learned” on a recent trip.

63. You want to notify a subordinate she was selected for an award.

64. You want to advise headquarters that you need more manpower to complete a tasking.

65. You want to inform your commander you cannot complete a job on the date requested.

66. You want to keep in touch with a supervisor from a previous job.

67. You want to let a subordinate know that his work is appreciated.

68. You want to ask your supervisor a question.

***Please turn the page to continue…***

## Communication Methods

1. Face to face conversation
2. Telephone
3. E-mail
4. Written communications (letter, memo, or message)

What type of communication would you choose if

69. You want to inform your commander of a potential EEO problem.

70. You want to ask your supervisor for an informal feedback session.

71. You want to discuss a personal problem with your supervisor.

72. You need to ask a co-worker for his opinion on a task.

73. You want your supervisor's approval for two weeks leave starting next week.

74. You want to assign a short notice suspense to a subordinate.

75. You want to give all squadrons on your base heads-up notice of a short suspense.

76. You want to congratulate a previous supervisor at another base on a recent promotion.

77. You want to ask your co-workers to assist you with a difficult task.

78. You want to tell a subordinate he needs a haircut.

79. You want to tell your commander that a co-worker's wife had a major car accident.

80. You want to tell your supervisor that you are too sick to report for duty.

81. You want to ask your supervisor for permission to take the afternoon off.

***Please turn the page to continue…***

PART IV

Please use the scale below to answer the following questions. Then completely fill in the appropriate answer on your bubble sheet.

|———————-|———————-|———————-|———————-|———————-|———————-|———————-|

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| **Strongly Disagree** | **Disagree** | **Slightly Disagree** | **Neither Disagree or Agree** | **Slightly Agree** | **Agree** | **Strongly Agree** |

82. My supervisor encourages me to use e-mail.

83. I encourage my subordinates to use e-mail.

84. I believe my use of e-mail enhances my effectiveness.

85. I believe my use of e-mail enhances my duty performance.

Thanks very much for taking the time to complete this survey. Your inputs are greatly appreciated and will be beneficial for understanding how people use different

communication media in the Air Force. All information provided will be used solely for consolidation and reporting as part of the entire study; individual responses will remain anonymous and be secured properly. Additionally, data collected can be requested IAW the Freedom of Information Act. If you have questions or comments please reply to Capt Dale Harrison, AFIT/LAA, Wright-Patterson AFB OH, DSN 785-7777 x2127, lharriso@afit.af.mil.

## Appendix B

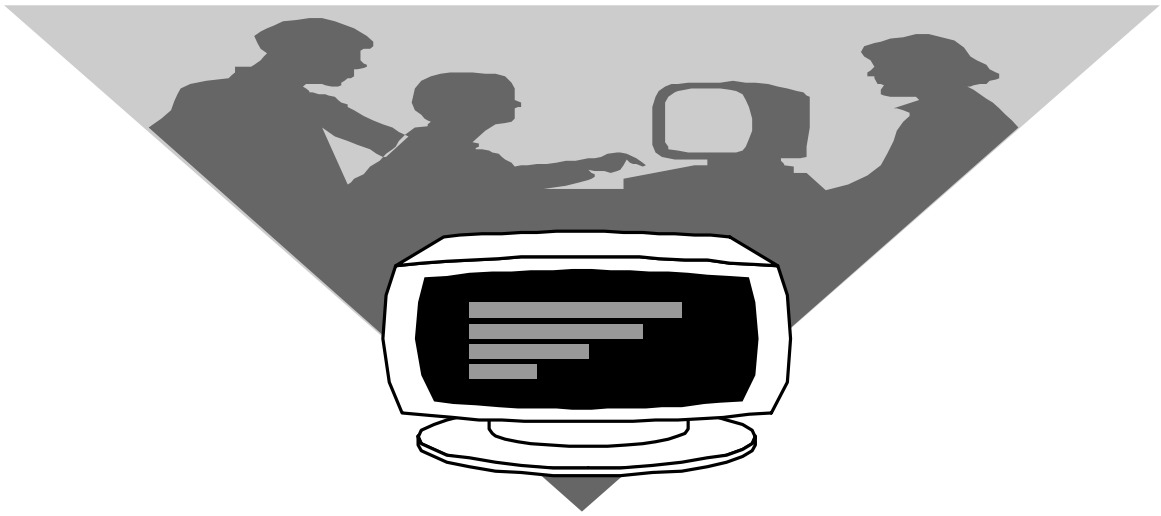
## Communications Media Survey (Supervisory)

USAF Survey Control # 97-30

Expiration Date: 31 Dec 97

# 2 AF/CC-SPONSORED

# ELECTRONIC COMMUNICATIONS MEDIA USAGE SUPERVISOR SURVEY



Capt Dale Harrison

AFIT/LAL

Wright-Patterson AFB OH

This 2 AF/CC-sponsored survey is designed to gather important information on how use of communications media contributes to mission accomplishment and effective individual performance in the Air Force

PART I

Please provide some background information by filling in

the appropriate answer on the bubble sheet provided.

**1. What is your sex?**

(1) Male

(2) Female

**2. What is your rank?**

(1) SSgt

(2) TSgt

(3) MSgt

(4) SMSgt to CMSgt

(5) 2Lt to Capt

(6) Maj to Lt Col

(7) Colonel or above

**3. How long have you been in the Air Force?**

(1) 1 year or less

(2) More than 1 but less than 2 years

(3) More than 2 but less than 3 years

(4) More than 3 but less than 4 years

(5) More than 4 but less than 5 years

(6) More than 5 but less than 6 years

(7) At least 6 years

**4. What is your current Air Force Specialty Code (AFSC)?**

(1) 3A0X1, Information Management

(2) 3S0X1, Personnel

(3) 3S2X1, Education and Training

(4) 4A0X1, Health Services Management

(5) Other _____ (fill in 5 on bubble sheet)

**5. How long have you supervised the person whose name is on the survey?**

(1) 1—3 months

(2) At least 3 months, but less than 6 months

(3) At least 6 months, but less than 9 months

(4) At least 9 months, but less than 12 months

(5) At least 12 months, but less than 15 months

(6) At least 15 months, but less than 18 months

(7) At least 18 months

***Please turn the page to continue…***

**6. How many people do you directly supervise in total? Include those people whose performance you monitor on a daily basis, even if you are not their reporting official.**

(1) Only this person

(2) 2—3 people

(3) 4—7 people

(4) 8—10 people

(5) 11—15 people

(6) Over 15 people

**7. At what command level do you work?**

(1) Numbered AF

(2) Wing/Base

(3) Group

(4) Squadron

(5) Other _____ (fill in 5 on bubble sheet)

**8. What is your education level?**

(1) High School or GED

(2) Some college but no degree

(3) 2 year degree (AA or AS)

(4) 4 year degree (BA or BS)

(5) MA or MS degree

(6) PhD

**9. When did you first use electronic mail?**

(1) 1997

(2) 1996

(3) 1995

(4) 1994

(5) 1993

(6) 1992

(7) 1991 or earlier

**10. How often do you use e-mail?**

(1) Do not use e-mail

(2) At least once a month

(3) At least once a week

(4) At least once a day

(5) Many times each day

**11. In your present position, approximately how many hours per day do you use e-mail?**

(1) Do not use e-mail on a daily basis

(2) Less than 1 hour

(3) More than 1 but less than 2 hours

(4) More than 2 but less than 3 hours

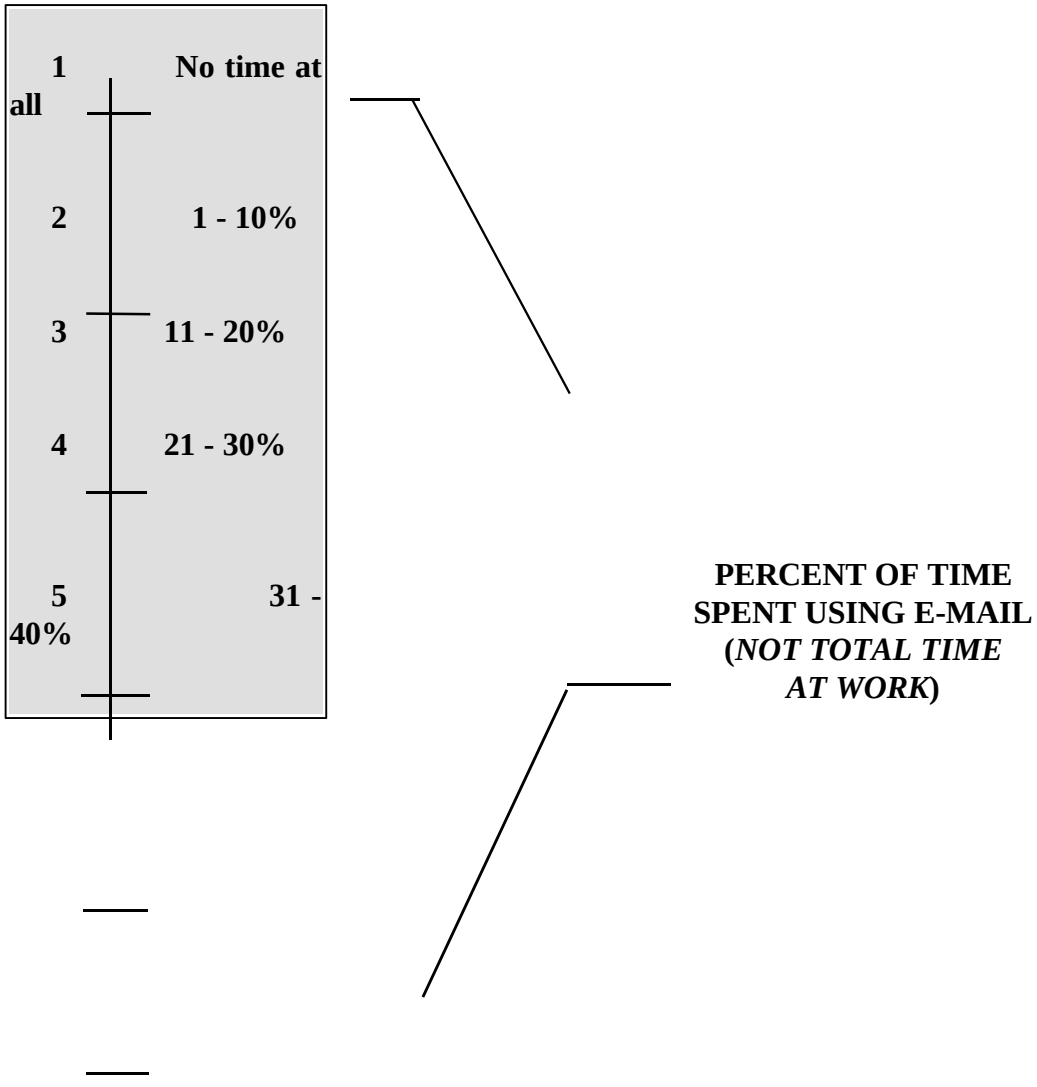
(5) More than 3 but less than 4 hours

(6) More than 4 hours

***Please turn the page to continue…***

Part II

Air Force people are permitted to use e-mail for personal and official communications. Of your total e-mail usage, please estimate what portion, on average, is used for the tasks listed below. Use the scale provided to record your answers on the bubble sheet.



**Of the time you use e-mail at work, what percentage of the time, on average, is …**

12. Using e-mail to answer a suspense.
13. Using e-mail for formal unit communications.
14. Using e-mail for informal unit communications.
15. Using e-mail to keep in touch with friends in the Air Force.
16. Using e-mail to keep in touch with friends outside the Air Force.
17. Using e-mail to share information with professional contacts in your AFSC.
18. Using e-mail to conduct personal business.
19. Using e-mail to answer a customer's request for information.
20. Using e-mail to request information related to your job.
21. Using e-mail for other job requirements.

**The total percentage for all responses should equal about 100%.**

***Please turn the page to continue…***

Part III

Please choose the communication method that you would be most likely to use if you were in the situations described below. Then fill in the appropriate answer on your bubble sheet. Assume that all 4 types of communication described below are available.

## Communication Methods

1. Face to face conversation
2. Telephone
3. E-mail
4. Written communications (letter, memo, or message)

What type of communication would you choose if …

22. You're responding to a long e-mail describing complicated issues you've been asked to take care of.

23. You want to tell your supervisor you found the answer to a question she had.

24. You are sending out instructions for completing a new recurring weekly suspense.

25. You are sending peers at other bases instructions on how to complete a new Air Force form.

26. You want to tell the whole squadron there will be a mass weigh-in coming up.

27. You want to remind committee members of the date, time, and location of an upcoming meeting.

28. You want to tell a counterpart at another MAJCOM how to do a complicated aspect of your job.

29. You want to tell a co-worker which section of an AFI has the information he's looking for.

30. You want to provide squadron members details of a change to the enlisted promotion system.

31. You want to tell a friend which form to use to request leave.

32. You want to pass on some good-to-know information to a co-worker.

33. Your boss has asked you to get a document to the group commander as soon as possible.

34. You want to tell the whole squadron about a severe weather warning or watch.

35. You want to tell a subordinate he must be in place for an overseas 120 day TDY in 4 days.

36. You want to update your boss on the status of a long-term project.

37. You want to tell committee members the wing commander requested a no-notice meeting tomorrow.

38. You want to tell a counterpart in another squadron how to do a routine aspect of your job.

39. You want to tell a friend which AF Instruction has the answer to a question her commander asked.

40. You want to tell squadron members about changes to the enlisted promotion system that will affect testing cycles in the next fiscal year.

41. You want to tell a new co-worker the squadron procedure for requesting leave.

***Please turn the page to continue…***

## Communication Methods

1. Face to face conversation

2. Telephone

3. E-mail

4. Written communications (letter, memo, or message)

What type of communication would you choose if …

42. You want to pass on some good-to-know information to your boss.

43. You are sending a required report on how your squadron met some quality initiatives.

44. You are responding to your boss' request for an update on the status of a long-term project.

45. You want to submit an idea that could save the Air Force thousands of dollars.

46. You want to give notes to subordinates who were unable to attend a meeting.

47. You are responding to your commander's request for information on an additional duty you are responsible for.

48. You want to pass on some good-to-know information to several co-workers.

49. Your boss has asked you to ensure all squadron commanders receive a document ASAP.

50. You want to tell a co-worker the details of a change to the enlisted assignment system.

51. You want to remind your subordinate of an appointment.

52. You want to remind co-workers of a staff meeting tomorrow.

53. You want to find out the status of work you assigned to a subordinate.

54. You want to give a subordinate additional instructions to complete a task.

55. You need to tell a subordinate that his father died.

56. You want to furnish routine information to a higher headquarters office on your base.

57. You want to ask a subordinate why he did not complete a task properly.

58. You want clarification on a policy from a higher headquarters on your base.

59. You want to pass on detailed instructions to people at three different locations on base.

60. You want to tell someone about a potential hazard.

61. You want to tell a subordinate to see the commander right away.

62. You want to inform your supervisor of “lessons learned” on a recent trip.

63. You want to notify a subordinate she was selected for an award.

64. You want to advise headquarters that you need more manpower to complete a tasking.

65. You want to inform your commander you cannot complete a job on the date requested.

66. You want to keep in touch with a supervisor from a previous job.

***Please turn the page to continue…***

## Communication Methods

1. Face to face conversation
2. Telephone
3. E-mail
4. Written communications (letter, memo, or message)

What type of communication would you choose if …

67. You want to let a subordinate know that his work is appreciated.

68. You want to ask your supervisor a question.

69. You want to inform your commander of a potential EEO problem.

70. You want to ask your supervisor for an informal feedback session.

71. You want to discuss a personal problem with your supervisor.

72. You need to ask a co-worker for his opinion on a task.

73. You want your supervisor's approval for two weeks leave starting next week.

74. You want to assign a short notice suspense to a subordinate.

75. You want to give all squadrons on your base heads-up notice of a short suspense.

76. You want to congratulate a previous supervisor at another base on a recent promotion.

77. You want to ask your co-workers to assist you with a difficult task.

78. You want to tell a subordinate he needs a haircut.

79. You want to tell your commander that a co-worker's wife had a major car accident.

80. You want to tell your supervisor that you are too sick to report for duty.

81. You want to ask your supervisor for permission to take the afternoon off.

***Please turn the page to continue…***

PART IV

Please use the scale below to answer the following questions. Then completely fill in the appropriate answer on your bubble sheet.

|———————-|———————-|———————-|———————-|———————-|———————-|———————-|

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| **Strongly Disagree** | **Disagree** | **Slightly Disagree** | **Neither Agree or Disagree** | **Slightly Agree** | **Agree** | **Strongly Agree** |

82. My supervisor encourages me to use e-mail.

83. I encourage my subordinates to use e-mail.

84. I believe my use of e-mail enhances my effectiveness.

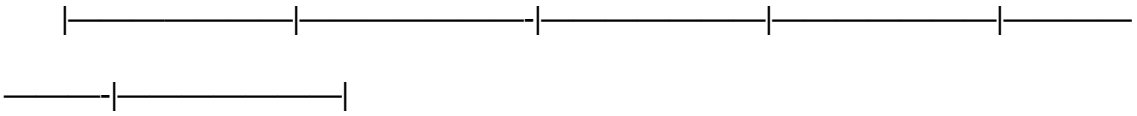
85. I believe my use of e-mail enhances my duty performance.

***Please turn the page to continue***

PART V

Please use the scale below to rate the person's job effectiveness, in comparison to others in the same AFSC, by answering the following questions. Then completely fill in the appropriate answer on the bubble sheet.

**1 2 3 4 5 6 7**



| Very Much Less Effective Than Peers | Less Effective Than Peers | Slightly Less Effective Than Peers | About the Same As Peers | Slightly More Effective Than Peers | More Effective Than Peers | Very Much More Effective Than Peers |
|---|---|---|---|---|---|---|

**How effective is this person's ...**

86. Use of e-mail.

87. Use of written communication.

88. Use of face-to-face conversation.

89. Use of the telephone.

90. Use of communication media in general.

91. Performance of job-related tasks.

92. Contribution to the unit.

93. Overall performance.

Thanks very much for taking the time to complete this survey. Your inputs are greatly appreciated and will be beneficial for understanding how people use different communication media in the Air Force. All information provided will be used solely for consolidation and reporting as part of the entire study; individual responses will remain anonymous and be secured properly. Additionally, data collected can be requested IAW the Freedom of Information Act. If you have questions or comments please reply to Capt Dale Harrison, AFIT/LAA, Wright-Patterson AFB OH, DSN 785-7777 x2127, lharriso@afit.af.mil.

## Appendix C

# Communication Scenario Sources

| | STATEMENT | SOURCE |
|---|---|---|
| 2 | You're responding to a long e-mail describing complicated issues you've been asked to take care of. | 1, #13 |
| 3 | You want to tell your supervisor you found the answer to a question she had. | 2, #C9 |
| 4 | You are sending out instructions for completing a new recurring weekly suspense. | 2, #C14 |
| 5 | You are sending peers at other bases instructions on how to complete a new Air Force form. | 3, #11 |
| 6 | You want to tell the whole squadron there will be a mass weigh-in coming up. | 1, #15 |
| 7 | You want to remind committee members of the date, time, and location of an upcoming meeting. | 2 #C7 |
| 8 | You want to tell a counterpart at another MAJCOM how to do a complicated aspect of your job. | 1, #20 |
| 9 | You want to tell a co-worker which section of an AFI has the information he's looking for. | 1, #9 |

| | | |
|---|---|---|
| 0 | You want to provide squadron members details of a change to the enlisted promotion system. | 4, #2 |
| 1 | You want to tell a friend which form to use to request leave. | 1, #9 |
| 2 | You want to pass on some good-to-know information to a co-worker. | 1, #9 |
| 3 | Your boss has asked you to get a document to the group commander as soon as possible. | 1, #14 |
| 4 | You want to tell the whole squadron about a severe weather warning or watch. | New |
| 5 | You want to tell a subordinate he must be in place for an overseas 120 day TDY in 4 days. | 1, #9 |
| 6 | You want to update your boss on the status of a long-term project. | 1, #8 |
| 7 | You want to tell committee members the wing commander requested a no-notice meeting tomorrow. | 6, #1 |
| 8 | You want to tell a counterpart in another squadron how to do a routine aspect of your job. | 1, #16 |
| 9 | You want to tell a friend which AF Instruction has the answer to a question her commander asked. | 2, #C11 |
| | STATEMENT | SOURCE |
| 0 | You want to tell squadron members about changes to the enlisted promotion system that will affect testing cycles in the next fiscal year. | 4 #2 |
| | You want to tell a new co-worker the squadron procedure for requesting | 1, #22 |

| | | |
|---|---|---|
| 1 | leave. | |
| 2 | You want to pass on some good-to-know information to your boss. | 1, #9 |
| 3 | You are sending a required report on how your squadron met some quality initiatives. | 1, #11 |
| 4 | You are responding to your boss' request for an update on the status of a long-term project. | 2, #C3 |
| 5 | You want to submit an idea that could save the Air Force thousands of dollars. (DISCARDED) | 2, #C5 |
| 6 | You want to give notes to subordinates who were unable to attend a meeting. | 1, #9 |
| 7 | You are responding to your commander's request for information on an additional duty you are responsible for. | 2, #C3 |
| 8 | You want to pass on some good-to-know information to several co-workers. | 1, #9 |
| 9 | Your boss has asked you to ensure all squadron commanders receive a document ASAP. | 1, #14 |
| 0 | You want to tell a co-worker the details of a change to the enlisted assignment system. | 4, #2 |
| 1 | You want to remind your subordinate of an appointment. | 4, #9 |
| 2 | You want to remind co-workers of a staff meeting tomorrow. | 4, #11 |
| | You want to find out the status of work you assigned to a subordinate. | 4, #5 |

| | | |
|---|---|---|
| 3 | | |
| 4 | You want to give a subordinate additional instructions to complete a task. | New |
| 5 | You need to tell a subordinate that his father died. | 1, #19 |
| 6 | You want to furnish routine information to a higher headquarters office on your base. | 1, #9 |
| 7 | You want to ask a subordinate why he did not complete a task properly. | 4, #45 |
| 8 | You want clarification on a policy from a higher headquarters on your base. | 4, #49 |
| 9 | You want to pass on detailed instructions to people at three different locations on base. | 1, #20 |
| 0 | You want to tell someone about a potential hazard. | New |
| 1 | You want to tell a subordinate to see the commander right away. | 1, #18 |
| 2 | You want to inform your supervisor of “lessons learned” on a recent trip. | 1, #9 |
| 3 | You want to notify a subordinate she was selected for an award. | New |
| 4 | You want to advise headquarters that you need more manpower to complete a tasking. | 4, #4 |
| | You want to inform your commander you cannot complete a job on the date | 4, #4 |

| | | |
|---|---|---|
| 5 | requested. | |
| 6 | You want to keep in touch with a supervisor from a previous job. | New |
| 7 | You want to let a subordinate know that his work is appreciated. | 4, #34 |
| 8 | You want to ask your supervisor a question. | 4, #32 |
| 9 | You want to inform your commander of a potential EEO problem. | 2, #C6 |
| 0 | You want to ask your supervisor for an informal feedback session. | 4, #39 |
| 1 | You want to discuss a personal problem with your supervisor. | 4, #28 |
| 2 | You need to ask a co-worker for his opinion on a task. | 4, #20 |
| 3 | You want your supervisor's approval for two weeks leave starting next week. | 4, #35 |
| 4 | You want to assign a short notice suspense to a subordinate. | 4, #12 |
| | STATEMENT | SOURCE |
| 5 | You want to give all squadrons on your base heads-up notice of a short suspense. | 1, #14 |
| 6 | You want to congratulate a previous supervisor at another base on a recent promotion. | New |

| | | |
|---|---|---|
| 7 | You want to ask your co-workers to assist you with a difficult task. | 5, #1 |
| 8 | You want to tell a subordinate he needs a haircut. | 1, #17 |
| 9 | You want to tell your commander that a co-worker's wife had a major car accident. | 1, #19 |
| 0 | You want to tell your supervisor that you are too sick to report for duty. | New |
| 1 | You want to ask your supervisor for permission to take the afternoon off. | 4, #35 |

Notes

1. Adams, 1996.
2. D'Ambra and Rice, 1994.
3. El-Shinnawy and Markus, 1997.
4. Lengel, 1983.
5. Russ, et al., 1990.

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