
Spring 2000

Developing Future Aviation Leaders: Advice from Today's Leaders!

Mary N. Kutz

Follow this and additional works at: <https://commons.erau.edu/jaaer>

Scholarly Commons Citation

Kutz, M. N. (2000). Developing Future Aviation Leaders: Advice from Today's Leaders!. *Journal of Aviation/Aerospace Education & Research*, 9(3). <https://doi.org/10.15394/jaaer.2000.1254>

This Article is brought to you for free and open access by the Journals at Scholarly Commons. It has been accepted for inclusion in Journal of Aviation/Aerospace Education & Research by an authorized administrator of Scholarly Commons. For more information, please contact commons@erau.edu.

**DEVELOPING FUTURE AVIATION LEADERS:
ADVICE FROM TODAY'S LEADERS!**

Mary N. Kutz

Because of their technical achievements, aviation personnel frequently find themselves in positions of influence or leadership in the community. The soft skills, which aid in the transition from a highly technical career to the intangible tasks of leadership, may have been neglected, thus making their new role even more difficult. Utilizing the findings of a qualitative study and a series of interviews with successful aviation leaders of Oklahoma, this paper addresses specific recommendations from today's leaders for filling the gap between the technical and soft skills required for effective leadership. Increased emphasis on communications curricula, development of decision-making and critical thinking skills, expansion of curricula related to global communications and strategies, and improvement of student focus and instructional methods were recommended by today's leaders for enhancing 21st Century aviation leadership skills.

INTRODUCTION

Background

Aviation has historically been a field of intensive technical training with limited emphasis on development of soft or human skills so frequently needed in dealing with the complexities of organizational leadership. Yet, those very technical achievements which lead to aviation career success often lead to organizational leadership positions or positions of influence in the community where soft skills are critical to success. For example, promotion to many lower and mid-level aviation leadership positions in the federal government and in private industry rank leadership skills and technical skills high on the list of requirements with technical skills shown as mandatory. Without a basic understanding of specific skills, practices, behaviors and other factors which contribute to successful leadership in the aviation community, the task of daily leadership in such a volatile environment becomes a very difficult one of trial and error. The body of knowledge pertaining to such success factors has been somewhat limited which further impacts the ability of the academic community to fill the gap between the technical and soft skills training needed for success in aviation leadership roles.

Although there is an abundance of literature on generic leadership roles, very little research has been career specific, particularly related to the field of aviation. Some

limited research of police, fire, military, space and even aviation incident commander roles during life-threatening events has provided insight into the crisis or emergency aspect of leadership (Flin, 1996), but the unique skills required for the successful accomplishment of daily aviation leadership responsibilities has not been addressed.

Robert L. Katz, in *Skills of An Effective Administrator* (1974) identified three basic kinds of skills every manager or leader must possess regardless of the type of organization they are managing: technical, human and conceptual skills. The relative importance of those skills depends mainly on the manager's rank in the organization with conceptual skills dominating at the top level and technical at the lower level. The human skills necessary to effective leadership are pervasive at all levels.

John French and Bertram Raven in the "*The Bases of Social Power*" (1959) identified five sources of power in organizational human relationships regardless of the type of organization being led, one of which is *expert power* based on relevant expertise. It would stand to reason that much leadership power in aviation is derived from the perception of technical expertise of the leader or *expert power*. However, the lack of aviation specific research leaves a void in understanding a field where career and life-threatening issues further complicate the leadership process.

Developing Future Aviation Leaders

In the absence of such research a good starting point for developing an understanding of aviation leadership would be to ask the advice of today's successful leaders, those who have "been there, done that." Analysis of past leadership successes, though not necessarily conclusive, certainly does provide valuable insight into patterns of success. Those patterns of success, when tempered with a healthy respect for the massive changes anticipated in the aviation environment of the future, can provide the foundation for building leadership skills through the educational arena. Research utilizing the results of qualitative interviews with successful aviation leaders in a cross section of aviation environments offers a powerful basis for enhancing that body of knowledge.

Oklahoma Aviation

The state of Oklahoma offers a fertile field for such research in that it enjoys a long history of aviation activities and provides a rich source of aviation leadership data in that aviation is the state's largest industry. The aviation and aerospace industry impacts the Oklahoma economy with 143,000 jobs, \$4.7 billion in payroll, \$11.7 billion in industrial output. (Oklahoma Aeronautics and Space Commission, 1999). In spite of the fact that Oklahoma does not serve as a hub for a major carrier, a good cross-section of almost every aspect of the aviation industry is represented in the state. Tinker Air Force Base, the Federal Aviation Administration's Mike Monroney Aeronautical Center, an American Airlines maintenance center, Southwest Airlines reservation center, Oklahoma Aeronautics Commission, several aviation museums including the Clarence E. Page Air and Space Museum, two large airports, numerous community and business airports, and numerous aviation schools all feed the state with an abundant supply of strong aviation leaders.

THE OKLAHOMA STUDY

Research Design

In a December 1998 qualitative study of the *Characteristics of Successful Aviation Leaders of the State of Oklahoma* (Kutz, 1998) a purposive sample of 18 top-ranked leaders was chosen for interview from a variety of aviation leadership roles in the following categories within the state:

- a) government leaders
- b) military leaders,
- c) airports managers,

- d) professional aviation organization leaders
- e) academic leaders
- f) industry (corporate general aviation and air carrier leaders)
- g) political and community leaders
- h) aerospace leaders

Although there is a sizeable population of aviation leaders in Oklahoma, a small purposive sample was chosen for the study in keeping with recommended qualitative research methods and the need to preserve the depth and quality of interviews. The subjects chosen for interview were physically located in Oklahoma, but their leadership influence ranged from local small airport managers to generals, senators, and astronauts whose leadership was national and international in scope. Subjects interviewed included leaders of volunteer organizations as well as organizations with a paid staff ranging in size from less than 25 to over 20,000. This sample was purposely chosen because it was believed to provide a rich source of data regarding leadership success in aviation and represented the kinds of leadership skills necessary to meet the growing demand for aviation leaders in the Oklahoma aviation environment

Limitations and Assumptions of the Oklahoma Study

The study was limited to a purposive sample of only those aviation organizations located in Oklahoma; therefore, the results could not be generalized to a larger population. Although the organizational headquarters of some of the leaders were located in other states, the leaders were chosen for interview based on having achieved the top-ranked position of that portion of their organization located in Oklahoma.

For the purposes of the study the following assumptions were made. 1) An individual who had achieved a position of influence, no matter how small or large in scope, was considered a leader; 2) subjects selected for interview were considered successful based on having achieved a position of influence in the aviation community or because they have achieved the top-ranked position in their specific aviation organizations; 3) whether or not leadership is a natural gift or a learned skill, a need exists for further knowledge and an improved understanding of basic leadership characteristics and skills in order to enhance natural leadership abilities; and 4) a study without restrictions pertaining to organizational size, scope, or

discipline would provide a rich source of data since successful leadership occurs in all organizations, whether volunteer or corporate.

Methodology

The primary source of data in the study were in-depth career and personal histories obtained by personal interview of selected participants. In addition to questions regarding family, education, career choices, values, management styles and other personal characteristics, leaders were asked for specific recommendations for developmental activities for future aviation leaders. Subjects were also asked for opinions and observations from their life and leadership experiences. A copy of the *Interview Guide Research Questions* (Kutz, 1998) is provided in Appendix B with an asterisk to indicate those questions which directly support this article. In addition to the interview data, vitae, periodicals, newspaper articles and other documents pertaining to each leader were used to triangulate and support the findings of the interviews.

Extensive notes taken during the interviews were later associated with the transcriptions of audiotapes of the interviews and other supporting documentation, then broken down and categorized through an open-coding process. Specific coding themes and categories were established to address the research questions. As new themes or categories emerged during the interviews, they were coded and included in the analysis. Once the data had been coded for each interview and compared with all of the other interviews, it was then put back together by making new connections between categories for specific characteristics of leadership. The last step in the analysis was to identify theoretical ramifications of the study as well as areas where additional research could further refine and develop the findings.

FINDINGS

Some of the findings of the study were significant and certainly provided a foundation for future research in the development of future aviation leaders. Since qualitative research is research based primarily on narrative data, the only numeric data is the demographic data provided in Table 1. *Oklahoma Aviation Leader Demographic and Career Characteristics by Specialty* (Kutz, 1998). The remainder of the data under Findings and Recommendations is paraphrased directly from the interviews and the comments of the participating leaders.

Demographic Data

Of the 18 successful aviation leaders interviewed, 15 were male and 3 were female; two were of minority descent; only 2 were under the age of 50. Other demographic data depicted in Table 1 noted that only 8 of the subjects held less than a Masters degree (7 of

whom had either a bachelor's degree or some college hours while 1 had no college hours), 6 held a master's degree and 4 held a doctor's degree. Fifteen of the participants held one or more airman ratings and three held no rating; 13 of the 18 had previous military experience not necessarily aviation in nature; and 6 of the 18 participants had no previous aviation experience prior to achieving their positions of aviation leadership.

One of the most significant demographic factors of the Oklahoma study of successful aviation leaders was the disproportionately high number of leaders with undergraduate and graduate degrees compared to the expressed expectations of the subjects regarding the impact of education on leadership success. Although all of the leaders believed that education was important to success, most expressed the opinion that work experience was more important. Only 33 percent of the leaders specifically stated that they would not have achieved their current level of success without having reached a specific level of formal education. Yet 83 percent of the participants had attained a college degree.

Characteristics, Values, Motivators, and Other Background Factors Contributing to Success

Characteristics and Other Factors. There was no noted pattern among the career histories of all of the leaders interviewed in the study. Based on the findings of this study, success in aviation leadership had not been entirely contingent upon prior technical experience in aviation. Although the majority of aviation leaders interviewed (approximately 83 percent) held one or more airman certificates, three of the leaders interviewed held no airman certificate yet were leading technical organizations. Approximately 33 percent of the subjects interviewed came to their present aviation leadership position from non-aviation related activities ranging from homemaker to financial management, marketing or human resource management. These findings seem to indicate that aviation leaders can successfully lead an aviation organization at the top levels without an aviation technical background. However, these findings were not in conflict with *Sitting in the Hot Seat* and the Flin (1996) study of incident or on-scene commanders in that most of the Oklahoma aviation leaders whose responsibilities definitely included aviation related life-threatening incidents, did have some aviation technical/professional qualifications.

Values. The most frequently referenced words used by aviation leaders to describe their guiding values were honesty and integrity. Many of the participants attributed

Developing Future Aviation Leaders

the importance of honesty to the fact that trust is inherent in the aviation business because of the safety issues. However, Kouzes and Posner in *The Leadership Challenge* (1995) conducted a study of leaders of all types of occupations and those leaders identified honesty as the single most important ingredient in the leader constituent relationship. Their findings tend to negate the notion that any one factor such as safety determines the degree of importance assigned to the value of honesty.

Motivators. The most frequently mentioned motivator of successful aviation leaders in the Oklahoma study was a love for the aviation business. Kouzes and Posner (1995) described love of products, services, constituents, clients, customers, and work as possibly one of the best kept leadership secrets. That analysis was consistent with the expressed passion for aviation that surfaced in almost every interview conducted in this study. Besides the emphasis on honesty, a passion or love for aviation was the most frequently mentioned phenomenon throughout the research project.

Findings of the Study Related to Development of Future Aviation Leaders.

Leaders who participated in the Oklahoma study were asked the following question with sometimes surprising results: "In developing curricula for future aviation leaders, what specific skills or traits should be developed in students considering careers in aviation leadership?" (Kutz, p. 199).

Communication Skills. Responses to that question were surprisingly consistent with almost 50% of the leaders responding with improved communication skills. Eight of the leaders emphasized significant deficiencies they had noted in the aviation community in the ability to communicate and recommended basic writing and verbal skills including grammar, spelling, punctuation, and speaking be incorporated into the curriculum. They further recommended that cooperative programs be established with high schools to improve the curriculum for students coming into the aviation program. One of the leaders from the space program who speaks to schools throughout the nation presents it to students in the following manner. "If you have a good idea and have no precision of expression or don't know how to develop a concept logically, then you've got a great idea that you'll never be able to do anything with." (Kutz, p. 197)

The findings of this study indicated that, at least for these

leaders, communication skills are basic to aviation leadership in both the technical and soft skills arena. Any effort to educate future aviation leaders would, of necessity, begin with development of effective communication skills. It was suggested that one way to achieve this was to utilize more student communication and participation in the classroom and less lecture on the part of the instructor.

Basic Management Skills. Approximately one-third of the leaders identified basic management skills as important to development of successful aviation leaders. Specific courses identified were: marketing, management, pricing, budgeting, selling, communication, community relations, accounting, bookkeeping, fiscal planning and budgeting, critical management issues (e.g. the aging fleet, the regulatory environment, the capital intensive environment, etc.), financial management, customer relations, and computer skills. One of the leaders emphasized the importance of teaching most of these skills in the broad sense of the word, rather than restricting them to aviation. That opinion was reinforced by another participant in the study who had attended an international conference with a panel of extraordinary business leaders who responded to questions by 300 seniors at Oklahoma University. Among the panelists was Bob Crandall of American Airlines who responded with a somewhat startling comment when asked what he looked for in young people coming to his company for employment. He expressed an interest in generalists or people with a curious mind who take a broad view of the world. All of the panelists expressed the opinion that even though they wanted well educated, technical people, the curriculum should be broader.

Student Assessment. Another frequently mentioned academic need as defined by aviation leaders was some form of assessment system to match student interests to developmental programs and career choices. Several of the leaders voiced concerns about students who are bored with school because they have no interest in their field of study or because of lack of enthusiasm by instructors. An assessment system was offered as one way to find that spark relevant to a student's interests and enthusiasm. One of the leaders summarized it by offering the following plan for development of aviation leaders. "Begin with the early identification of natural leaders, provide them with the right training and the right experience to 'sharpen the saw' and instill a continuous lifelong learning philosophy. The issue then becomes what kind of curriculum is needed to

accomplish all three phases of this plan.” (Kutz, p. 173) **Motivational Instruction.** Several of today’s leaders voiced concerns that the school system is defusing the excitement children have for aviation so that students lose their enthusiasm and love for aviation by the time they reach high school. They stressed the importance of developing more inspiring teachers. They also expressed concerns regarding today’s system of teaching to the lowest level of understanding in the classroom.

Decision-Making Skills. Leaders also offered suggestions for curriculum development in decision-making skills which involve obtaining and translating data, differentiating between near and long-term success, and analyzing unintended consequences of decisions. The use of real-world case studies with real-world problems was one method suggested for enhancing decision-making skills. Other methods for incorporating real-world experiences into the educational arena included internships and other academic programs that cooperate with industry.

Soft Skills. An emphasis on courses in soft skills such as listening, motivation, interpersonal relations, and creativity were all stressed as an important part of a holistic approach to leadership development.

Values Education. Another interesting suggestion involved the notion of teaching courses pertaining to values, particularly those values emphasizing integrity and high standards which are an integral part of the aviation experience. This recommendation was based on a belief that values can be learned and that values critical to preservation of human life should be emphasized throughout the aviation curriculum.

History. Still another curriculum need identified by some of the leaders as important to leadership success was an improved understanding of history, specifically aviation history, which is woven deeply into the history of this country. Aviation leadership roles frequently demand an awareness of the impact of the events of the past and the resulting implications for the future. One of the leaders expressed strong concerns about the accuracy of historical data as being taught in public schools and suggested remedial education of college level students in developing their understanding of history as well as renewing their appreciation for learning from past experience.

RECOMMENDATIONS FOR EDUCATORS

On the basis of the information gleaned from the interviews with successful aviation leaders participating in

the study, the following recommendations were offered by the leaders regarding overall curriculum needs and leader development.

Curriculum Enhancements

The findings of this study indicate a need to move communication skills to the top of the aviation leadership curricula and replace the traditional lecture with participatory activities. Additional study is needed to further assess this need and identify ways to fill the void which surfaced as a strong concern of leaders in the Oklahoma study. Leader recommended solutions to other concerns included increased emphasis on decision-making and critical thinking through opportunities for graduated learning. For example, beginning leadership decision making curricula with classroom solutions to “real world case studies” followed by discussion of the actual solution with the organization leader. Subsequent shadowing assignments to an aviation organization followed by practical application of skills through an internship program were examples of developmental opportunities that could be used to further develop critical thinking skills. Further study of these identified needs and potential methods for addressing them could provide valuable insights for future curriculum development.

Development of Creative Thinking Skills.

Because complex learning will be the order of the day in the rapidly evolving aviation leadership environment of the 21st century, instructor creativity and student creativity must be maximized. Potential leaders must be able to tackle complex issues of the future and tomorrow’s leaders must be competitive in an aviation environment that is seeking people with a curious mind who take a broad view of the world. These findings indicate that further studies are needed regarding the maximization of creative thinking on the part of educators and students of aviation leadership.

Improved Student Focus and Instructional Methods

Some of the leaders in the study offered not only curricula recommendations but suggested methods for addressing other concerns they had noted in their leadership roles. Lack of instructor enthusiasm for the subject matter, lack of instructor and student accountability, and political influence on student learning requirements and certain curriculum such as history, were some of the concerns that surfaced in the interviews. Oklahoma leaders offered the following suggestions to address some of those concerns.

It was recommended that academia work across organizational lines with public and private learning institutions at all levels through such organizations as the

Developing Future Aviation Leaders

Oklahoma Aviation Alliance to develop a comprehensive plan for addressing deficiencies and dealing with motivational concerns. Increased collaboration with industry was also recommended for educational institutions in meeting rapidly changing needs. Improved flexibility and creativity in academic programs through exchange programs, internships, customized courses, on-site degrees, and distance learning were identified as just some of the ways concerns can be addressed. Creatively designed programs such as "Executive MBAs," which are time limited and designed to assist executives in their efforts to remain current in technology and leadership skills, also offer new opportunities and flexibility in meeting the unique needs of future leaders.

IMPLICATIONS FOR THE FUTURE

Based on the conclusions and recommendations of the study, the following comments are provided by the researcher for consideration in developing leaders of the future.

The Role of Education in Developing Future Leaders.

Although the results of the study indicated that leaders believe experience is more important to leadership success than education, it was readily apparent by the level of education of participants in the study that education had been a high priority. Although one leader had achieved career success with no college education, 83% held undergraduate degrees and 56% had completed a graduate degree. Obviously, the academic community has served and will continue to serve a vital role in meeting the needs of aviation in the development of leadership skills through continued research and expanded curricula.

21st Century Leadership Roles.

Although the jury is still out on the issue of natural leadership versus learned leadership, the aviation environment of the next century will place new demands on the educational system of the future in the development of tomorrow's leaders. Even those leaders who appear to have a natural gift for the human skills needed in effective leadership will require further refinement and development of those skills to enhance their natural abilities in dealing with the challenges of the 21st century. Academia will not only have to keep pace with change across the aviation disciplines but also forge ahead of change in exploring the unknown. The concerns expressed by aviation leaders of Oklahoma regarding the role of education in dampening the enthusiasm and inquiring minds of young people may or may not have validity. However, they should provide a warning flag to educators of the importance of further study

of future aviation education needs as well as maintaining open lines of communications with today's leaders.

Several of the aviation leaders in the study predicted that aviation, as we know it today, will be virtually nonexistent in the next few years with the inroads in technology and space. Of necessity, aviation and space education must also be dynamic, setting new frontiers and moving ahead of change. The rapidly evolving aviation community of the 21st century will require innovation, risk taking and breaking free of old ways of doing things in the classroom and in aviation organizations.

If aviation changes as radically as predicted by many of the leaders interviewed during this study, institutions of higher learning must change as rapidly in order to provide learning opportunities. Educational institutions must explore new concepts and serve as role models, by leading out in customer service, technology, and human relations as well as flexibility and adaptability to a rapidly changing world. Those academic organizations that insist on maintaining bureaucratic structures that require students to become dependent personalities as they try to fight their way through a maze of red tape will be left behind. Close alliance with their customers in the aviation industry and a willingness to explore, develop and model new ways of doing business will provide the key to future success in developing aviation leaders. Such mass conferencing collaborative techniques as Future Search and Stakeholders Conferences where representatives from academia meet with all stakeholders (aviation students and aviation customers in industry) on a regular basis to identify learning needs and develop a joint plan of action for meeting those needs are just some of the methods that can be used to accommodate the rapidly growing field of aviation leadership. Regardless of the method used, it is imperative that academia learn first-hand what it will take to provide dynamic new aviation leadership skills for the 21st Century.

Summary

While quantitative research is designed to explain, predict and/or control phenomena through focused collection of numerical data, qualitative research uses narrative data to promote understanding of not just the way things are, but WHY, and frequently surfaces more questions than answers. The Oklahoma study opened the door to a brand new field of inquiry in an effort to obtain insights into the phenomenon of successful leadership in the unique environment of aviation. Using advice from

today's leaders it provided some interesting insights that will possibly serve as a launching pad for further inquiry into the WHY of aviation leadership in the hope that a growing body of knowledge will be beneficial in the

education and development of tomorrow's leaders. □

Mary Kutz holds a Doctor of Education degree in Applied Educational Studies, Aviation and Space Education, Oklahoma State University, as well as a Master's of Business Administration and a Bachelor's of Business Administration degree from the University of Central Oklahoma. Dr. Kutz is an Assistant Professor in the College of Education, Aviation and Space Education, Oklahoma State University, Stillwater, Oklahoma. Her experience with aviation management and leadership includes 20 years with the Federal Aviation Administration in a variety of leadership roles including that of Manager of the Airmen Certification Branch with responsibility for certification of all U.S. civil airmen. Her FAA experience also included responsibility for counseling managers on performance issues and conducting management/supervisory training for the Mike Monroney Aeronautical Center's Human Resource Management Division.

REFERENCES

Flin, R. (1996). *Sitting in the hot seat, leaders and teams for critical incident management*. New York, NY: John Wiley & Sons.

French, J.R. and Raven, Bertram (1959). *The bases of social power*, Ann Arbor, MI: University of Michigan Press.

Katz, R.L. (1974). Skills of an effective administrator. *Harvard Business Review*, Sep.-Oct., Number 74509.

Kouzes, J.M., & Posner, B. Z. (1993). *The leadership challenge*. San Francisco, CA: Jossey-Bass Inc.

Kutz, M.N. (1998). *Characteristics of successful aviation leaders of Oklahoma*. Unpublished doctoral dissertation, Oklahoma State University, Stillwater, OK.

Oklahoma Aeronautics and Space Commission, Oklahoma Department of Transportation. (1999). *Economic Impact of Aviation and the Aerospace Industry in Oklahoma*. Compiled by: Center for Economic and Management Branch Michael F. Price College of Business, The University of Oklahoma.

AUTHOR'S NOTE

A Glossary is provided as Appendix A to define specific phrases and terms used in the article and the study. A special note of appreciation to Ms. Dovie Brown, Graduate Assistant and Master's candidate, Oklahoma State University, Aviation and Space Education, whose research, content and editorial contributions were invaluable in meeting the deadlines of this paper. Thanks also to Dr. H.C. McClure, Professor, Oklahoma State University, and his wife, Jane McClure for their content and editorial review of the original draft.

TABLE I

OKLAHOMA AVIATION LEADER DEMOGRAPHIC AND CAREER CHARACTERISTICS BY SPECIALTY

SPECIALTY	NO.	GENDER		EDUCATION			AIRMAN CERT.		CAREER		MILITARY EXP	
		F / M		B or <	B / M / D	None /	1 or more	NovAv /	Av	NonMil /	Mil	
Government	4	1	3	2	0	2	1	3	1	3	2	2
Military	3	0	3	0	2	1	0	3	0	3	0	3
Airports	3	0	3	2	1	0	0	3	2	1	0	3
Professional	1	1	0	0	1	0	0	1	1	0	1	0
Academia	2	0	2	0	1	1	0	2	0	2	0	2
Industry	2	1	1	2	0	0	1	1	1	1	2	0
Political	2	0	2	2	0	0	1	1	1	1	0	2
Aerospace	1	0	1	0	1	0	0	1	0	1	0	1
Total	18	3	15	8	6	4	3	15	6	12	5	13

APPENDIX A.

GLOSSARY OF TERMS AND PHRASES

TERMS AND PHRASES AS DEFINED FOR PURPOSES OF THIS STUDY:

Influence in the community – For purposes of this study, positions of influence in the community included those individuals engaged in a political or civic leadership role who had made significant contributions to aviation in Oklahoma.

Leadership position - Positions which required the use of human skills in guiding a group or organization to effectively meet its goals. These leadership positions included those which were formally delegated the authority to lead (such as the CEO of a major airline) and those which were positions of informal leadership whose authority was derived from the followers (e.g. leaders of groups engaged in volunteer activities with such organizations as the Oklahoma Aerospace Museum).

Natural leadership versus learned leadership - Refers to two opposing theories of leadership: *natural leadership* implies that leaders are born with certain characteristics that contribute to their ability to lead; *learned leadership* implies that leadership has little to do with natural forces or gifts but can be learned.

Shadowing – A developmental process whereby a learner spends several days with a leader in his/her organizational environment in order to learn by observation.

Soft skills – Frequently referred to as human or people skills involve those interpersonal skills needed to communicate, lead, and work effectively with people.

Successful aviation leaders - Individuals who have achieved a position of influence in the aviation community.

Technical skills - A specialized knowledge or understanding of a specific kind of activity, analytical ability within that specialty, use of the tools of the specialty and application of the methods, processes, procedures or techniques of the specific discipline (e.g. air traffic control, pilot, flight instruction, flight engineer skills, etc all require technical skills within an aviation specialty.

APPENDIX B.

INTERVIEW GUIDE RESEARCH QUESTIONS

CAREER AND PERSONAL:

- a) ***Describe your career history highlighting those things which significantly impacted your rise to a position of leadership.**
- b) ***How have your guiding values or principles influenced your career? How do they influence your daily decisions within the organization?**
- c) ***Describe your educational history and its impact in attaining success on your position of leadership.**
- d) ***What other developmental activities have you pursued that may have impacted your leadership success?**
- e) **Describe your family. What, if any, experiences in your background may have influenced your success as a leader?**
- f) **Describe your management or leadership style.**
- g) **When you are doing your very best in your leadership role, what qualities or traits do you exhibit?**

AVIATION LEADERSHIP

- h) **What does the term “successful aviation leadership” mean to you?**
- i) **You have been identified as a successful leader in aviation. Do you agree that you would be considered successful? Why? Why not?**
- j) **Think of someone you know personally in a position of aviation leadership who has done an excellent job providing effective leadership to the people and activities around him or her and tell me, in detail, what that person has done which constitutes, “highly effective leadership.”**

Developing Future Aviation Leaders

- k) What specific qualities do you think are important to leadership in the aviation community?
- l) What single characteristic or skill would you say was most important in aviation leadership?
- m) What, if any, differences have you noticed in achieving success as a leader in an aviation versus another environment?
- n) In your opinion, what personal and professional backgrounds and values foster leadership in the aviation community?
- o) *What motivates aviation leaders to perform exceptionally? Describe some positive and negative factors of leadership in the aviation work environment that are motivating or demotivating.
- p) *Which do you think is more important to leadership success: formal education or work experience? Why?
- q) Which do you think is more important to success as a leader: individual competence or support from the boss or organization? Why?
- r) *In developing curricula for future aviation leaders, what specific skills or traits should be developed in students considering careers in aviation leadership?

OTHER

- s) What are your future career expectations?

NOTE: Research questions adapted from the following sources:

Carmichael, D.B. (1992). *High achievers in a large government organization*. Unpublished doctoral dissertation, University of Oklahoma, Norman, OK.

Kouzes, J.M., & Posner, B.Z. (1995). *The leadership challenge*. San Francisco: CA: Jossey-Bass Inc.